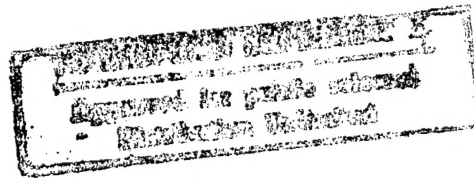


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# China Report

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8 September 1982

# CHINA REPORT

## ECONOMIC AFFAIRS

No. 264

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## NATIONAL POLICY AND ISSUES

### 'JINGJI YANJIU' ON TECHNICAL TRANSFORMATION

HK261217 Beijing JINGJI YANJIU [ECONOMIC RESEARCH] in Chinese No 7, 20 Jul 82  
pp 37-41

[Article by Ding Changqing [0002 7022 7230] of the Ministry of Machine Building: "The Machine-Building Industry and Technical Transformation of the National Economy"--written in May 1982]

[Text] In the "Government Work Report" delivered at the fourth session of the Fifth NPC, Premier Zhao Ziyang pointed out: Carry out technical transformation step by step in key units and make the maximum use of existing enterprises. This is the key to smoother economic development. He again pointed out: The machine-building industry must be transformed and reorganized early; it should endeavor to design and manufacture sophisticated machines and equipment to meet the needs of technical transformation in all trades. The author of this article is going to discuss some questions concerning the machine-building industry and the technical transformation of the national economy.

Technical Transformation Is an Objective Requirement of the Development of the National Economy

Low economic results have for long years become a pronounced problem in China's economic work. According to statistics, the equipment coefficient of the country's industrial fixed assets in 1980 (that is, the original value of the fixed assets for production use owned on the average by every staff member or worker) was 11,900 yuan, 160 percent more than in 1957; mechanical power owned on the average by every staff member or worker was 3.51 kw, or an increase of nearly 200 percent over 1957; but over the same period, the industrial output value per worker only increased by 90 percent. According to calculation, compared with 1965, of the additional amount of the total national industrial output value in 1980, the output value increased as a result of the increase in the number of staff and workers was about 64 percent and the increase as a result of the improved labor productivity accounted for only 36 percent. Again, take the machine-building industry for example, between 1957 and 1978 the number of staff and workers increased by 250 percent; the amount of equipment went up by 790 percent; the fixed assets registered an increase of 850 percent, the total industrial output value rose by 500 percent and the output value per worker only showed an

increase of 70 percent. During the mid-1950's and the mid-1970's, in several industrially developed countries in the world, the number of personnel only increased by 30-140 percent, equipment increased by 40-120 percent (on the other hand, there was a decrease in the total amount of equipment in West Germany and Britain) but over the same period, their total industrial output value generally increased by 300-500 percent and labor productivity increased by 300-400 percent. These facts all go to show that in the past 10-20 years, the development of China's social productive forces was achieved chiefly by building new factories, and increasing equipment and the number of staff and workers rather than increasing the quality of production factors and labor productivity through technical transformation. This was a course which called for fairly big investments and yielded fairly poor results. The CPC Central Committee has decided that we will have to rely chiefly on carrying out technical transformation step by step in key units and bringing the role of existing enterprises into full play for expanded reproduction in the future. This is a major strategic change in the principle of construction of the national economy and also tallies with the laws of industrial development. Not only will the realization of this change solve the difficulties of dearth of assignments for heavy industry, revitalize production and raise economic returns so as to ensure a definite growth rate for our economy; what is more important, it will also help raise the level of industrial techniques, create conditions, build up reserves and lay a solid basis for the modernization program in the years to come.

Judging from the trend of development of industry in other countries, this situation is also universal: When industrial departments develop to a certain scope, expanded reproduction will always turn from the increase in the "quantity" of production factors to the improvement of their "quality," that is, carrying out the technical transformation of existing production capacity. For example, from 1947 to 1978, of the investments in the fixed assets of the United States of America, the portion used in the transformation of existing enterprises constituted 69 percent. Of this, the portion between 1944 and 1950 was 55 percent and that between 1971 and 1978 was 77 percent. Take another example, the output of metal-cutting machine tools of the United States between 1952 and 1972 totalled 3.59 million of which 2.39 million were used in equipment renewal, comprising 67 percent of the additional new machine tools. Japan's total output of machine tools from 1962 to 1972 was 1.62 million of which 1.36 million were used in equipment renewal, accounting for 84 percent of the additional new machine tools. It is reported that in the machine-building industry of the Soviet Union, the ratio of investment used in equipment renewal and transformation was 63 percent in 1965 and 72 percent in 1974. From 1966 to 1970, every year 135,000 machines were, on the average, transformed and renovated; between 1971 and 1975 the figure reached 146,000 and in 1976 it topped 154,000. It seems that it is justifiable to say that the tendency of the industrially developed countries to increase the use of investments and equipment in the technical transformation of old enterprises reflects the general laws of industrial development.

Ours is a socialist country. Fundamentally speaking, carrying out technical transformation of existing enterprises to ensure the continuous development of the level of China's industrial techniques is also determined by the basic socialist economic laws. It is known to all that the basic socialist

economic laws are to guarantee that the constantly growing material and cultural needs of the whole society are satisfied to the greatest extent by using the method of helping steadily raise and perfect social production on the basis of a high level of technology. Here not only the aim of socialist production is clear and definite but the means to this end is also clear and definite. The two are closely related. Failure to solve the question of means will make the goal difficult to attain. Only on the basis of a high level of technology, can we ensure a continuous increase in socialist production and help meet the constantly growing material and cultural needs of the whole society.

#### The Position and Role of the Machine-Building Industry in Technical Transformation

The important position and role of the machine-building industry in the technical transformation of the national economy is, in essence, determined by the importance of the implements of production in the activities of production. Marx pointed out: "Nature has not created any machines, locomotives, railways, telegrams, automatic cotton spinning machines, and so on. They are all the products of mankind's industry; the materials in the natural world transformed into organs with which mankind tames nature with his will and carries out his activities in the natural world. They are the organs in the brain of mankind which are created by the hands of mankind. They are all materialized intelligence." ("Program For Critique of Political Economics (Draft)," People's Publishing House, Vol 3, p 358) The materialized intelligence indicated here by Marx referred, actually, to the fact that science and technology are objectivized into implements of production and then become a direct productive force. It is the product of mankind's intelligence and also the gauge of the development of science and technology. The practical use of machines and equipment as means of production began in the mid-18th century when steam engines came into being and later with the development of science and technology and the repeated changes in the means of production, machines and equipment continuously developed. Particularly after World War II, new science and technology and new means of production were mutually integrated and permeated. The role they played in modern social production greatly surpassed that in any previous stage. At the beginning of the 20th century, only 20 percent of the increase in the labor productivity of large-scale industry was obtained by relying on the adoption of new science and technology and means of labor and by the 1970's, the figure had increased to 60-80 percent. At present, scientific research in bringing about changes day after day and technology is developing at an increasingly accelerated pace. The task of transforming a huge amount of new science and technology into direct productive forces and replacing outdated inefficient machines and equipment with new efficient machines and equipment on a larger scale will surely fall to the machine-building industry. As a specialized department which manufactures implements of production, the machine-building industry is duty-bound to shoulder this task.

However, theoretically recognizing the important position of the machine-building industry does not mean that the machine-building industry can play an important role in practice. For the machine-building industry to really

shoulder the task of carrying out the technical transformation of the national economy, it should have certain conditions. On this question, Stalin clearly pointed out: "In our country, which is still young as regards technical development, industry has a special task to fulfill. It must reconstruct on a new technical basis, not only itself, not only all branches of industry, including light industry, the food industry, and the timber industry; it must also reconstruct all forms of transport and all branches of agriculture. It can fulfill this task, however, only if the machine-building industry--which is the main lever for the reconstruction of the national economy--occupies a predominant place in it." ("Collected Works of Stalin," "Report to the 17th Party Congress on the Work of the Central Committee of the CPSU (Bolshevik)" Vol 13, p 276)

For the machine-building industry to "occupy a predominant place," first it should have a certain scope. Only thus can it lay the most rudimentary material basis for shouldering the task of technical transformation. Take the situation of our country for example. In the early days of the founding of the PRC, China had just over 90,000 machines in terms of machines and equipment throughout the nation, chiefly for making repairs and supplying replacements. The machine-building industry was basically blank. Under these circumstances, we failed even to provide the various departments with commonly used equipment and carrying out technical transformation was, needless to say, out of the question. Through our efforts in the construction of the first few 5-year plans, we established batches of backbone enterprises and filled in the gaps in many trades. As a result, the manufacturing capacity of the machine-building industry developed at a rapid pace. By the end of 1970, China had more than 1.1 million machine tools, an increase of more than 1,000 percent over the figure in the early days of the founding of the PRC and the ranks of technical personnel grew rapidly. It was precisely under these circumstances that the machine-building industry was able to manufacture and supply the metallurgical industry with the "nine items of major equipment," an oil refinery comprising 26 installations with an annual production capacity of 1 million tons, complete sets of equipment for a synthetic ammonia plant with a yearly capacity of 50,000 tons, a 12,000-ton free-forging hydraulic press, scores of precision machine tools, and so on. During the 1970's further advances were made in the machine-building industry. In the past 30-odd years, despite problems, such as the twists and turns, and ups and downs in the course of its development, its irrational internal structure and the decentralization of the organization of enterprises, our machine-building industry has become a machine-building industry which is by no means small in scale and of relatively complete specifications. It was not only able to supply the various departments with a large amount of technology and equipment in the past but can also create a reliable basis for the technical transformation of the national economy in the future.

For the machine-building industry to "occupy a predominant place," what is most important is that it should have an advanced technical level. Technical transformation means replacing obsolete backward equipment with technically advanced and more efficient equipment and proceeding to change the whole national economy from a relatively backward technical basis to a relatively

advanced technical basis rather than exclusively replacing old equipment with new equipment of the same level. Without a certain advanced level, it is impossible for the machine-building industry to fulfill this task. The conspicuous problems confronting China's machine-building industry at present are that their products have little variety and are poor in quality and low in standard. In terms of product variety, the variety of products which are grouped into the units under the jurisdiction of the former First Ministry of Machine Building number 27,000; that of farm machines total about 2,000 and that of basic electronic products is 4,200. These figures coupled with the varieties of products of the light and textile industries and some other machines number no more than 40,000 to 50,000. The product variety of the machine-building industry of the industrially developed countries generally reaches several hundred thousand. Their product variety is higher than ours in terms of magnitude. The failure to meet the needs of many kinds of technology and equipment of the various departments owing to lack of product variety will surely interfere with the improvement of labor productivity and the full utilization of resources. For example, the papermaking industry is short of raw materials but in the forest zones of northeast China alone there are 3 million cubic meters of remains of branches and crotches left unused every year. One of the reasons for this state of affairs is the lack of a series of technology and equipment, such as machines for stripping the bark off trees. As a further example, Yantai of Shandong Province is a fruit-producing base. Every year nearly one-fifth of the total output of prematurely wind-dropped fruits and damaged fruits and the leftovers which constitute 15-25 percent of the raw materials for canned fruit fail to be fully used. In other countries, this kind of fruit and leftovers are used as raw materials for making condensed fruit juice for which there is a big market. At present China does not yet have such equipment. In terms of the level of products, the products that are level with the world's 1970-level constitute no more than 5 percent and those that are level with the 1940's and 1950's technical level make up around 60 percent. For example, one-third of the thermal-power equipment is composed of small-scale medium and low-tension units with a capacity of less than 50,000 kw each, which consume 15 million tons of coal more than the large-scale high-tension units a year. At present, there are seven countries in the world, that is, the United States, Britain, France, Japan, West Germany, Switzerland and the Soviet Union, which have been able to manufacture large-scale high-tension power equipment with a capacity in excess of 1 million kw while our country has still been unable to design and manufacture any 600,000-kw units. Various facts have proved that if the machine-building industry only circles at a backward level, it will be unable to undertake the historic task of serving the technical transformation of the national economy. Only when the machine-building industry moves to the forefront and raises itself technically, can it supply the technical transformation of the various departments with sufficient advanced and practical technology and equipment.

For the machine-building industry to "occupy a predominant place," it should have a lead period in terms of growth rate. The so-called lead period means allowing the growth rate of the machine-building industry to outstrip that of the whole industry and the national economy. For dozens of years after World War II, there has been such pronounced lead period in the development



of the machine-building industry of the major industrially developed countries. According to statistics for the materials concerned, the annual average growth rate of the machine-building industry and the whole industry and national economy of the United States of America, the Soviet Union, Japan, Britain, France and West Germany during 1951 and 1975 is as follows (calculated according to percentage):

<u>Countries</u>	<u>Period</u>	<u>Machine Building Industry</u>	<u>The Whole Industry</u>	<u>GNP</u>
United States	1951-75	3.5-6.7	3.6	3.2
USSR	1951-75	13.1	9.5	7.8
Japan	1951-74	19.1	13.7	9.0
Britain	1951-75	2.9	2.3	2.4
France	1951-65	6.6	5.5	4.9
West Germany	1951-75	7.4	6.3	4.1

This lead period of the machine-building industry of the industrially developed countries was closely related to the level of investment. In order to raise the level of the machine-building industry and accelerate its development, the investments of these countries in the machine-building industry increased at a rapid pace. For example, the amount of investments of the United States in the machine-building industry between 1947 and 1977 increased from \$1.5 billion to \$18.2 billion, or an increase of 1,100 percent; that of Japan between 1961 and 1970 increased from 569.9 billion yen to 1,748 trillion yen, or an increase of more than 200 percent; and that of West Germany in the period from 1958 to 1970 increased from 4 billion marks to 10.1 billion marks, or 150 percent increase.

The general level of the average growth rate of China's machine-building industry is also higher than that of the whole industry. The annual average increase in the industry under the former First Ministry of Machine Building from 1952 to 1977 was 14.3 percent and the average increase in industry in the same period was 11.2 percent and the lead rate was 28 percent; the amount of investment increased from 590 million yuan which was the annual average figure during the "first 5-year plan" to 1.02 billion yuan in 1978. However, what deserves attention is that after the year of 1972, the growth of the machine-building industry was lower than that of the industrial growth rate for many successive years. This was a reflection of the disproportions in the internal sectors of industry. Over the past few years, to readjust the relations of the disproportions in the machine-building industry, the amount of investment in it was reduced by a big margin. But whether seen from the needs of the present technical transformation or from the long-range development of the national economy, we must adhere to giving priority to the development of the means of production, maintaining a definite level of investment and a definite lead period in the machine-building industry, raise the technical level as quickly as possible and intensify the manufacturing capacity. In this way the machine-building industry can genuinely become a department for equipping the national economy.

## How Should the Machine-Building Industry Serve Technical Transformation?

Serving the technical transformation of the national economy is a long-term important task of the machine-building industry at present and in the future. For the machine-building industry to serve technical transformation well, it must strive to do the following things well: 1) It must familiarize itself with and grasp the technology of the departments which use its products and strive to be the "technologists" of the users. Mechanical and electrical products are used extensively and the requirements of the users are many and varied. Different departments and different regions have more often than not different requirements for one and the same product. Moreover, machine-building industrial enterprises have for long years taken care of only manufacturing rather than the use of their products; produced only the standard products which were already in the catalogue of products and did not enthusiastically produce products that were not on the catalogue. Thus there emerged a situation in which "we will supply you with whatever we produce." As a result, some special requirements of the users failed to be met and the user had to make do with the products supplied to them. The phenomenon of "a big horse pulling a small cart" or "a pony pulling a big cart" can be found everywhere. In the last 2 years, in the course of readjustment, the machine-building industry has readjusted its service orientation, put an end to the practice of "bureaucrats engaging in commerce," strengthened the sense of serving the customers and turned the previous practice of "we will supply you with whatever we produce" into the practice of "we will produce whatever the customer needs." This is a great success. However, it is far from sufficient to remain at this stage of the matter. Over the past few years, some enterprises have further improved their service style, spontaneously analyzed and studied the technology of the departments which use their products and designed and supplied the customers with advanced and practical technology and equipment in accordance with the technological requirements of the customers. But, technical transformation presupposes the satisfaction of the demand for technological products and strives to make the technology required not only advanced and practical but also economical and reliable rather than calling for advanced and sophisticated technology with a high level of automation. Therefore, only when the machine-building industry conscientiously investigates and familiarizes itself with the technology in the production of the departments which use its products and closely integrates itself with the units which use its products, can it supply such products to the users. For instance, there is a big saltworks. In the past, the cast-iron salt water pumps which it used were inefficient, poorly hermetically-sealed and seriously corroded. The rotating vanes of the pumps needed to be replaced every few days, thus either causing waste or interfering with production. After contracting the tasks, the company for technical design of complete sets of general-purpose machinery on the one hand used the advanced product mix of other countries for reference and on the other made a serious study of the demands of the production technology of the customer and, in conjunction with the customer, developed its products in light of the results of practical application. Formerly some comrades asked for the use of an automatically-controlled hermetic-sealing technique. However, through experiments and comparison, they adopted the structure combining the vanes with flexible graphite



hermetic sealing. Although their products are not fully automated, they are easy to operate, require relatively little investment and their hermetic sealing property is better than that of the products of other countries. Through 5 months of practical operation, no leakage defects were ever found and the service life of the vanes could reach 8 years. The user thus had confidence in them. The saltworks handed over the salt water pumps transformation funds to the company on their own initiative for the latter to carry out transformation of the technology and equipment of the saltworks. These experiences have enabled the machine-building industry to break a new path of becoming a good equipment department for the national economy.

2) It must supply advanced and practical products with diverse product designs and sizes to the users. The needs of the technical transformation of the various departments for machines and equipment can be realized only on the basis of continuously improved and developed machinery products. The key for the machine building industry to supply advanced and practical products with diverse product designs and sizes lies in paying close attention to the work of scientific research and raising the level of study and design of new products. The present designing of machinery products chiefly adopts a method of analogy by experience under which machinery products are enlarged or reduced in accordance with certain prototypes. It lacks its own research data and perfect experimental conditions. This will inevitably interfere with the growth rate of new products and the improvement of the technical level of products. At present, key parts of some major products have gone wrong and the reasons have still not been found out. Their quality has for many years failed to be up to standard. This is chiefly where the reason for this state of affairs lies. Therefore, to increase product variety and raise the level of products, we must start with science and technology and strive for a breakthrough in the research and design of new products. We must vigorously organize the study and popularization of design theories and methods, such as value engineering, the theory of reliability, the optimization method, interactive engineering, the supplementary computer devices, automatic drafting and the integration of design and manufacturing, all theories and methods which have arisen abroad over the past 20 years, strengthen the training of scientific and technical personnel and the building of experimental bases, gradually form our own data system and standardization of systematic designing to provide the upgrading and replacement of products with basic data and conditions. While strengthening the study of basic theories, we must concentrate our efforts to pay close attention to tackling the key problems of basic components and devices and increase their reliability, durability and precision preservation. The machine-building industry is an industry with a nature of combination and assembly. If it masters advanced product designing theories and methods and has also the basic components and devices which are reliable in properties and complete in varieties, this will lay a solid foundation for supplying the users with advanced and practical products with diverse product designs and sizes.

3) It must supply technology and equipment in terms of complete sets of equipment. Machinery products invariably need forming into complete sets of equipment. Whether it is a single machine or a unit, it will be unable

to run well if it lacks a value or an accessory. Supplying products in complete sets of equipment means making things easy for the users in using the products supplied on the greatest scale and as far as possible. In the past, machinery products were poor in terms of forming complete sets of equipment. Machine tools were supplied without any accessories, water pumps were supplied without the three additional valves, valves were supplied without accessory flanges and so on. If the users want to have a project transformed, they have to rush about everywhere. This practice not only caused troubles but also stretches the construction cycles and results in great waste. A method of handing over the key to the user has been universally adopted by other countries in terms of complete sets of equipment. That is, the services which range from the prospective designing of a project, the choice and use of equipment, the designing of equipment, the placing of orders, the checking and acceptance to the delivery, and then from the reorganizing of the installment, and the debugging until the project operates normally, are all completed, and finally the keys are handed over to the user. Compared with such a level of forming a complete set of equipment, we still have a long way to go. Over the past few years, many machine building industrial departments and enterprises have attached importance to this work and carried out various types of work in forming complete sets of equipment. For example, the Shanghai heavy-duty machine plant helped three small cement plants with an annual capacity of less than 200,000 tons each carry out technical transformation and provided them with complete sets of cement plants. In the past, the plant could only produce crushers and ball mills, but now has developed to produce vertical and rotary furnaces and is responsible for the installing and debugging of equipment, thus doubling or redoubling its annual output and greatly making things easy for the users. The Sichuan instrument general plant designed and manufactured a complete automatic installation for recovering ammonium nitrate for the Yunnan natural gas chemical plant and thus solved the problem of waste water polluting farmland and this recovers 110,000 tons of ammonium nitrate a year. Now the general plant has contracted for 110 orders for complete sets of instruments from the light and textile industries, the petroleum industry, the chemical industry, the defence industry, the pharmaceutical industry, the metallurgical industry, building industry and scientific research and teaching departments. In a country with vast territory such as ours, the work of forming complete sets of equipment must be extensive and multifarious. Of course, some large-scale projects which are used to form complete sets of equipment and listed in the state plan should be undertaken by specialized departments in charge of forming complete sets of equipment. However, the companies and factories which have conditions are encouraged to undertake many small-scale simple complete sets of projects or projects in the nature of necessary accessories under the guidance of the state plan so as to make things easier for the technical transformation of various units.

4) It must do a good job in technical service. Machinery products are durable products. When machines and equipment are installed and put into operation, this is just a beginning for the departments which use them and means that the service of the machine-building industry--this service department--is only half done. Particularly after a new kind of technology and equipment is supplied, the equipment still needs long year of testing in

practice and in addition, the users of the equipment may come across various problems in the course of using the equipment. Machine building industrial enterprises are required to help solve these matters through technical service. The so-called technical service is aimed at giving play to the technical strong points of the machine building industrial departments and helping the users familiarize themselves with the properties of equipment and grasp the correct ways of operation; removing all sorts of technical problems which crop up in the course of using the equipment; supplying the required spare parts; and with the development of technology, continuously supplying new skills so that the equipment can produce grater results. Many enterprises have gained quite a few experiences in this respect. These experiences should be summed up and spread. It must be realized that carrying out technical service will not only make things easy for the users but also create favorable conditions for the development of the machine-building industry itself. Technical service will enable the machine-building industry to have close ties with the users, to find out the problems of machines and equipment which are exposed to the long years of operation and to keep abreast of the various demands of the users. Recollecting, analyzing and sorting out this technical information will provide reliable data for the improvement of products and will promote the better development of products.

CSO: 4006/617

## NATIONAL POLICY AND ISSUES

'XINHUA': USE LOCAL FUNDS TO DEVELOP ENERGY, TRANSPORT

OW211415 Beijing XINHUA Domestic Service in Chinese 0056 GMT 20 Aug 82

[Article by XINHUA commentator: "Raise Funds From Various Sources to Develop Energy and Transport"]

[Excerpts] Beijing, 20 Aug (XINHUA)--Energy and transport are two conspicuously weak links in our national economy. In order to solve the problem of energy and transport shortage, it is necessary to strive to develop energy and transport while bringing the development of those industries that consume large amounts of energy under resolute control and making great efforts to conserve energy. This is an urgent task of our national economy as well as an important strategic measure for long-range development of our national economy.

The government has decided that in the sixth 5-year plan period, a considerably large amount of funds shall be used for the development of energy and transport. This is very necessary. However, preliminary arrangements show that the budgeted national revenue alone is far from being able to meet out requirements. We must mobilize the financial resources of the various sectors and arouse their enthusiasm for developing energy and transport. With the restructuring of the management system in the past several years, local authorities and enterprises have been handling increasing amounts of funds. Combined, these funds have come to equal one half of the budgeted national revenue. This shows that it is not only necessary, but also possible, to raise a portion of the funds for developing energy and transport from local sources and enterprises.

At present many localities have begun to do so. According to statistics, Shandong, Shanxi, Hunan, Sichuan, Guangdong, Jiangxi, Anhui, Guangxi, Hubei, Jiangsu and Liaoning have raised some 720 million yuan for the development of local coal mines. Guangdong, Jiangsu, Zhejiang, Shanghai, Hebei and Shandong have collected some 1.7 billion yuan and signed agreements with the Ministry of Coal Industry and the Ministry of Water Conservancy and Power on jointly running coal mines and power stations. The Ministry of Coal Industry and various departments and localities in Henan Province have pooled funds to improve inland river docks, build a collier fleet and rebuild and expand railroads.

All localities and departments should follow the guidance provided by the state plan and actively raise funds for developing energy and transport. At the same time they should inspect their planned construction projects to avoid hastily starting any project lacking the necessary energy and transport conditions. In the course of enterprise consolidation, efforts should be made to lower the energy consumption of existing enterprises. We should make a decision in dealing with those enterprises that consume too much energy, turn out product of poor quality and operate at a loss for a long time by shutting them down, suspending their operation, merging them with other enterprises or switching them to the manufacture of other products.

In short, everyone should be concerned about the development of energy and transport and take action to contribute to it.

CSO: 4006/617

## ECONOMIC PLANNING

### MANAGEMENT OF COMMODITY STORAGE

Shijiazhuang HEBEI RIBAO in Chinese 13 May 82 p 2

[Article: "Raising the Economic Benefits of Storage"]

[Text] Storage of goods is an important link in the circulation of goods. The level of management of storage work has a direct influence on the overall economic benefits of purchasing and selling businesses.

As the result of the reorganization of enterprises, there has been a definite strengthening of storage work in recent years as well as an improvement in the level of management, with decreases in both losses and costs. However, from an overall standpoint, of the various links in the process of circulation of goods, storage work is still comparatively weak. There are many problems associated with it and losses and waste are severe. In 1981, the supply and marketing cooperatives' system in Hebei suffered a loss in commodities of more than 30 million yuan. The majority of storehouses in Hebei have not instituted quota controls, expend a great deal of labor without being able to obtain much gain, and are not strict and impartial about rewards and penalties. This has affected bringing the initiative of staff and workers into full play. Storehouse utilization rates are generally quite low. Some goods are piled up on docks and some are even piled or strewn around in disorder.

Some storage assignments are inadequate so that storehouses are left unused throughout the year with the result that losses occur from year to year. The Qinhuangdao Chemical Fertilizer Storehouse of the Hebei Provincial Production Materials Company has 3,400 square meters of storage space. Since it was built in 1977, there have basically not been very many goods that could be stored in it. In the two years 1980 and 1981, it suffered a loss of 16,000 yuan. The Hengshui Chemical Fertilizer Storehouse, which belongs to the same company, has 10,000 square meters of storage space and its own railroad line of 5 kilometers in length. Because its utilization rate has only been 40 percent and because of poor management, it suffered a loss of 100,000 yuan in the two years 1980 and 1981. Storehouse losses affect the economic results of purchase and sales work.

Storehouses, in the broad economic sense, are enterprises for storing goods. That is, they are enterprises and they should be managed according to the methods of managing enterprises in order to seek economic benefits. In order to raise the level of management in storage work and to turn losses into profits, we

conducted a pilot project on developing enterprise management at eight large and medium-sized storehouses. In one year, considerable results were obtained. Because the cotton storehouse in the Langfang district had been affected by changes in production, it basically did not have any cotton storing assignments. Consequently, the storehouse used the advantageous condition of being fairly close to Tianjin to bring about an active expansion of "daichu"[0108 0328] [literally substitute storing]. In 1981, it handed over a profit of 196,000 yuan to the state. Practice demonstrated that developing enterprise management methods for storehouses is an important means of improving storage conditions and upgrading economic benefits. It is only by implementing enterprise management methods that such rules and regulations as independent accounting, responsibility for profit or loss, various types of quota targets and responsibility for safety can truly be put into effect.

In implementing enterprise management techniques, we must also intensify political and ideological work, energetically promote making many contributions to bringing about the four modernizations, commending good persons and good deeds and criticizing various bad tendencies in order to promote the establishment a material culture though establishing a spiritual culture.

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CSO: 4006/472

## ECONOMIC MANAGEMENT

### ENTERPRISE MANAGEMENT IMPROVED BY LABOR DIVISION BY PARTY, ADMINISTRATION

Beijing JINGJI GUANLI in Chinese No 6, 15 Jun 82 pp 30-34

[Article: "Do Well in the Division of Labor Between Party and Administration, Improve and Strengthen Party Leadership of Enterprises"]

[Text] The Benxi Iron and Steel Corporation is an integrated iron and steel works, under which there are 42 production factories and mines and auxiliary units. At present there are over 107,000 staff workers. Subordinate to the corporation are 42 party committees, 829 general branches and branches, and over 15,000 party members. In recent years we have earnestly implemented the "Temporary regulations of the Staff Workers' Congress of state-operated industries and enterprises," "Temporary work regulations for directors of state-operated factories," and "Work regulations for grassroots organizations of industries and enterprises of the Chinese Communist Party" (trial draft) issued by the Party Central Committee and the State Council. We have adhered to the basic principles of collective leadership of party committees, democratic management of staff workers and administrative command of factory directors. In resolving this problem of the division of labor between party and administration, we constantly search for and sum up our experiences, and have achieved initial and definite results.

Our experience and practice in carrying out the division of labor between party and administration are as follows:

#### I. Constant Deepening of Understanding Is the Prerequisite To Doing a Good Job in the Division of Work Between Party and Administration

In the case of our iron and steel corporation, when we begin to divide work between the party and administration, the understanding ranging from cadres to workers is not consistent, and different ways of thinking exist. Generally there are 3 kinds:



1. Unwillingness to divide work due to the restriction by force of habit. For over 10 years, party and administrative work in enterprises has been done in a muddled way. If the upper levels handle something in a certain way, the masses will understand it in that way. It is a matter of getting used to something. Concretely, there are "four customs": the party committee is accustomed to taking on all administrative work, administrative leaders are accustomed to relying on the party committee, the masses are accustomed to looking up the secretary on every matter, and the organs of upper levels are accustomed to arranging all work.

2. Fear to divide work because of the worry that leadership of the party might be weakened. According to the demands of the division of labor between the party and administration, the structure of new party committee member greatly differs from before. The proportion of factory directors entering the party committee group has declined while that of persons in charge of party committee departments has increased. This has aroused quite a lot of discussion among cadres. "Four fears" are concretely expressed: (1) Some comrades believe that the party committee is the leading nucleus of the enterprise, the central task of the enterprise is production, the deputy factory director is the commander of the first line of production, they fear that if they do not enter the party committee group production might be affected; (2) some believe that according to the demands of implementing division of work between party and administration, if the secretary has "less authority" it is feared that the leadership of the party committee might be weakened; (3) it is feared that after division of work between party and administration is implemented, one might repeat the error of "the system of one director" and divorcing from party leadership; (4) some feel that if persons in charge of party committee departments enter the party committee group, it is feared that the leading nucleus of the party committee might be lowered to the level of a work department of the party committee.

3. Unwillingness to divide work because there is little authority. An absolute minority of cadres feel that whether they enter the standing committee of the party committee (or an all-committee that does not have a standing committee) concerns cadres in the 3 aspects of authority relating to different ranks, order of names and treatment. They are affected by fame and gain and are therefore unwilling to divide work.

Faced with the various confused understanding and ideological hindrances described above, we begin with resolving understanding and have stressed the 3 following areas of work:

1. We organize study to deepen the understanding of the significance of division of work between party and administration. We first organized the corporation, factories and mines into 2 levels of classes for members to conduct special study. On this basis, we also organized party members into subject

levels for cadres to have concentrated study, and used the form of party lessons to organize party members for general study. They have studied the related documents and important speeches of leading comrades of the central authorities since the Third Plenary Session of the 11th Party Central Committee and they have studied the "Temporary regulations of the Staff Workers' Congress of state-operated industries and enterprises," "Temporary work regulations for directors of state-operated factories," and "Work regulations for grassroots organizations of industries and enterprises of the Chinese Communist Party" (trial draft) issued by the Party Central Committee and the State Council. To enable grassroots party committees to resolve the problem of non-division of work between party and administration through reelection, we studied and analyzed the membership composition of each unit's party committee group. The chief comrades in charge of the corporation's party committee even personally did ideological work and helped to deepen understanding among individual leading cadres of factories and mines who did not adequately understand the division of labor between party and administration. On this basis, the party committee of the corporation also convened a forum of party committee secretaries of factories and mines to further deepen their understanding and study the problems that might be encountered in dividing work between party and administration. Through studying, everyone understood that doing a good job in the division of labor between party and administration is necessary in order to improve and strengthen the party's leadership of enterprises, to strengthen the ideological and political work of enterprises, and to strengthen the system of production command.

2. We look back at history, sum up experiences and lessons, and deepen the understanding of work division between party and administration. The Benxi Iron and Steel Corporation is a long-time enterprise. Like its fraternal units it centers around division of work between party and administration and has experienced several different stages in the leading system carried out in enterprise, and it has both experience and learned lessons. In the decade of turmoil it has implemented a unified leadership, which was in reality a "one-man system" without work division between party and administration with all matters large or small required to be approved by the secretary. At that time, the management of enterprises was in confusion and production met with serious destruction. Since 1979, we have fulfilled the demands made by the Third and Fifth Plenary Sessions of the Party Central Committee to "earnestly resolve the phenomenon of non-division of work among party, administration and enterprise, substituting administration by the party and substituting the enterprise by the administration," and to "strengthen and improve the party's leadership" in spirit. We have step-by-step carried out the division of work between party and administration, strengthened the production command system, built and perfected various systems of rules and regulations so that the management of enterprises has gradually proceeded on track, various tasks have made great progress and various economic and technical targets have reached a new level. By recalling the past, everyone can soberly recognize that only by

earnest implementing the several regulations issued by the Party Central Committee and carrying out division of labor between party and administration can we give full play to the role of the party committee's leading nucleus and the role of the administrative command system, strengthen and improve party leadership and truly operate enterprises well.

3. We use model experiences and resolve the understanding of work division between party and administration in terms of practice. To resolve the problems encountered in carrying out division of work between party and administration, we first conducted experimental points in the transportation department. Through reelection, the party committee of the transportation department altered the composition of membership of the party committee, made definite the work responsibilities of party and administration, formulated the "Regulations of political work" and "administrative system," and established a system of responsibility for chief engineers, mechanics and accountants. After work is divided between party and administration each carries out its duties and responsibilities; the administrative leadership has increased its sense of responsibility and its work efficiency. The party committee has strengthened its leadership of economic work and placed its main energy on building the party and on ideological and political work, changing the appearance of the enterprise. Since 1979 every year it has completed transportation and loading tasks ahead of schedule, and each economic and technical target has reached or surpassed the highest levels in the past. In the metallurgical department's competition and appraisal of the transportation system among 9 iron and steel enterprises, it has captured first and second places every year instead of ending up with last and second last places. It has been appraised as the advanced collective in the province and the municipality. We have given publicity to the experience of the transportation department throughout the corporation. At the same time when we directly stress exemplary models, we have combined it with the reorganization of the enterprise by sending work teams and investigation teams to help reorganize individual party committees that we seriously are unwilling to divide work between party and administration and cause disunity.

## II. Do Well in Division of Labor Between Party and Administration in Organizational Structure and System

On the basis of deepening understanding, in order to truly achieve division of labor between party and administration in organization, system and actual work, we began by resolving the "four characters," stressing four links, and properly handling three relationships.

1. Provide two main duties for party and administration organizationally by resolving "concurrence." Practice has enabled us to understand that one of the main reasons why party and administration did not have division of labor in the past is that it was nominally a unified system but in reality it was a "one-man system." It not only destroyed the party's collective leadership and

democratic centralism but also brought great danger to our undertaking. Therefore, to do well in the division of labor between party and administration, we must separate the duties of the two main jobs of party and administration, resolve the problem of mutual concurrent jobs, and pay attention that the secretary and factory director not be the same individual. At present, the problem of concurrent jobs has been completely resolved. When resolving this problem, we particularly stressed that the posts of factory directors must be filled by experienced, young and healthy comrades so that after the separation of party and administration they can independently perform production administrative work. Since 1978, we have recommended 18 secretaries and 33 directors of factories and mines after earnest and strict selection. Party committee secretaries and directors of 23 main production factories and mines have now been put in place. Most of the newly selected comrades have at least 10 years of work experience in the enterprise, some are graduates of colleges of professional training or technical secondary schools in the 1960's, who have rather rich practical experience and strong organizational ability.

We perfected party and administrative work organs by resolving "confusion." In the past party and administrative work organs were full of confusion, their subordinate relationships and duties were unclear. In order to build a party and administrative work system, after 1978 we abolished the political departments of the corporations, factories and mines, changed the former organization and propaganda sections to party committee organization and propaganda departments respectively, divided the "two committee offices" into the party committee office and factory department office, established the discipline committee of the party committee, and correspondingly filled them with capable cadres. We also reorganized the union and communist youth league organizations. In the area of production administrations throughout the corporation, factories and mines, we established command systems for production administration and work organs headed by managers and factory directors in accordance with the demands of the four modernizations. At the same time, we paid attention to selecting "professionals" and "expert" who have real substance to strengthen and staff these work departments. Since 1978, the corporation has selected a total of 137 special personnel and deputy factory directors, 66 chief engineers and accountants, and have given good play to the role of administrative command system.

3. We reorganized membership of party committees to resolve the problem of "division" in terms of the group's composition. Formerly, members of party committee groups of factories and mines were mostly factory and mine directors. This situation often caused the party committee to be a committee of both party and administration. It was not advantageous for factory directors to exercise unified command and overall responsibility for production and management, and it also lowered the level of leadership of the party committee. In accordance with the spirit of concerned documents of the higher authorities last year, we explicitly stipulated that the newly elected party committee, the number of

administrative factory directors entering the standing committee of the party committee should generally be 2 and at most 3. Comrades in charge of party discipline committees, organization departments, propaganda departments, unions and other departments who are in accord with conditions were to become alternates to enter party committees or standing committees. In accordance with this provision, up to the present among group members of 32 party committees of factories and mines which have undergone reorganization, the proportion of factory and mine directors has decreased from 61 to 33 percent. After the reorganization, most of these discipline committee secretaries, organization department heads, propaganda department heads and union chairmen of these units entered the party standing committee groups. This way, we resolved the phenomenon of no-division of work between party and administration in terms of the membership structure of party committee groups.

4. We built work systems for both party and administration by resolving "responsibility." Formerly, an important reason for the lack of division between party and administration is that their duties, responsibilities and authority were not explicit and the system was not perfect. As a result, all matters great and small were discussed by the party committee, and party committee became the "trump card" for certain cadres to decide on problems and the "shield" for them to disclaim responsibilities. In accordance with the spirit of the "Guiding principles" and the "Work regulations for grassroots organizations of industries and enterprises of the Chinese Communist Party," since 1978 we have combined the study of the experiences of the leading iron and steel works to help all units to build the work systems of both party and administration. Chiefly there are the "Scope of duties of the party committee," "Duties of the party committee secretary," "Regulations on ideological and political work" "Work regulations of factory directors," which defines the scope of the work of party and administration as well as their mutual relationship. Now, basically everyone has his own special responsibility, every matter is managed by someone, matters are handled in an orderly way, there are standards for checks and detailed rules and regulations for work. We have changed the confused situation in the past when there were no rules and regulations to follow. At the same time, we have established various systems of regular meetings for party and administration, and have made explicit stimulations for the substance of each meeting, its attending personnel and time, assuring normal work order so that the party committee's decisions and the factory director's orders can be promptly implemented.

In the last several years, from the practice of constantly resolving the problem of division of labor between party and administration, we have felt that in order to truly carry out this division of labor well, we must also pay attention to properly handling 3 relationships other than stressing the four links mentioned above:

1. Handling the relationship between the party committee and the administration well. The party committee of an enterprise is the leading nucleus of that enterprise. The administrative group headed by the factory director is under the leadership of the party committee. The way relationship between is arranged and the way they achieve unity in real work and keep in step with each other is a key link to strengthen and improve the party committee's leadership. Judged on the basis of the relatively good practice in handling the relationship between party and administration in several of our grassroot units, we believe that this problem depends on the party committee. On administrative work the party committee must dare to leave it alone but not just watch it idly; it must lead, lend support and assistance but not to taking on everything or taking its place. We initially summed it up into "four when": when the party committee discusses important production, technical and other administrative work, the views of the factory director must be respected; when the views of the factory director are not unanimous with the views of the majority of committee members, decision must not be hastily made; when after the factory director arranges work and encounter hindrances or even clashes at the lower levels, the party committee should give prompt support to the factory director; when mistakes are made because the work decided by the factory director is carried out, the party committee cannot cut his ground but should positively and enthusiastically help to think of ways to make amends or corrections.

2. Handling the relationship between the party committee secretary and the factory director well. The party committee secretary and factory director are both chief persons in charge of the enterprise. Only if the secretary and factory director cooperate and unite to fight can the division of labor between party and administration be assured. Therefore, in the course of carrying out division of labor between party and administration we paid strong attention to handling the relationship between the party committee secretary and the factory director well. Judged from the arrangement of the 42 grassroots party committee secretaries and factory director in our enterprise, there are 4 situations: (1) The secretary is somewhat stronger. In these units, the party committee secretaries are slightly older than the factory directors, they have worked in the enterprise slightly longer, and their qualifications are slightly stronger so that they can talk slightly better. Normally the factory director respects the secretary. If we do not pay attention to handling the relationship between the secretary and the factory director well after work is divided between party and administration, the "four slightlys" will be a hindrance to the factory director, respect will become reliance, and it might even lead to the old way of whatever the secretary says is final. Therefore, we particularly stress that in these units the secretary must use every means to give play to the role of the factory director and build the director's authority in commanding the production administrative system of the whole factory. (2) The secretary is weaker than the factory director. In such units the work ability of the factory director is stronger, which is more suitable for carrying out division of labor between party and administration. For this, we strongly stress that the secretary must pay attention to giving play to the role of the collective



leadership of the party committee. The factory director must boldly take responsibility but must self-consciously safeguard the leadership of the party committee. (3) Both the secretary and the factory director are strong; they are familiar with their jobs, they understand management and are equal. After the division of labor between party and administration, we particularly emphasize that secretaries and factory directors of these units must have mutual respect, learn from each other, coordinate closely, avoid grudges against each other and the "two hardened ways." (4) Both the party committee secretary and factory director are weak. These units often can think and work together, and the collective role is well played. As we pay attention to individual relationships between party committee secretaries and factory directors which are well handled under different conditions, now the secretary and factory director of any group can pay attention to mutual respect. The secretary supports administrative work but does not take on everything; the factory director boldly takes responsibility for administrative but does not become arbitrary.

3. Handling the relationship between ideological, political work and production well. Strengthening the ideological and political work assures the completion of production tasks and resolves the "two hardened ways" of ideological and political work and production administrative work, which is significant to doing well in the division of labor between party and administration. The No 1 iron factory, construction corporation and other units adhere to the principle of putting ideology in the lead, use the dredge method and adopt diverse forms to combine with production reality to do well in political and ideological work. For example, combining material reward and ideological, political work, combining administrative command and ideological, political work, and combining factory rules and regulations and ideological, political work compell staff workers to complete various tasks with fulfilled sentiments and a lofty will.

### III. Conscientiously Strengthening and Improving the Party's Leadership of the Enterprise Is the Key To Doing Well in the Division of Labor Between Party and Administration

After division of labor between party and administration is carried out, in accordance with the principle of the party minding the party and the administration devoting itself to administration, the factory director exercises the authority of unified command over production, technical and management activities within the enterprise. The party committee is freed from the large amount of trivial administrative tasks in the past. This brings changes to its work in guiding ideology, substance and methods. It also makes higher and more severe demands on the work of the party committee. Through practice, we have learned that after the division of labor between party and administration we not only did not weaken the party's leadership of the enterprise but on the contrary, we have strengthened and improved it. In a concrete sense, we feel that there are "three benefits":

First, it benefits major matters emphasized by the party committee in the work of the enterprise that have a bearing on the general course and overall situation. For example, the financial task handed down to our corporation by the state last year was 170,000,000 yuan. Through internal balances, we only completed 150,000,000 yuan. Under these circumstances, the party committee stressed the overall completion of the 1981 financial task as a major matter, decided on a general mobilization of staff workers and the policy of making a firm grasp, stressing early completion and seizing reality, and widely aroused the masses to use every means to make more contributions to the state. As for key positions, weak links and major production factories and mines which affected the completion of the production and financial tasks of the corporation, the chief comrades in charge of the party committees of the corporation personally stayed at grassroots units to investigate and study, inspect and supervise. Due to the common effort of both party and administration, we not only completed the financial quota to be handed over to the state but surpassed it by 7,550,000 yuan.

Second, it benefits the party committee in attending to building the party and changing the phenomenon of the party not minding the party. In concrete terms, we have realized the "four strengthening":

(1) By organizing life closely, we have strengthened the building of group style. The corporation and party committees of factories and mines have popularly built and perfected a system of meetings on democratic life. At present, more than 80 percent of the party committees of factories and mines are able to persist in convening a party committee meeting or democratic life every season, and more than 85 percent of the party members and leading cadres can self-consciously participate in their own party groups and branches for organized life. Over 85 percent of the corporation's general party branches and branches can keep up with the system of "three meetings and one class." viewed from the party committee of the corporation, several years ago sometimes a meeting on democratic life could not even be convened for one organized group. Last year, we succeeded in convening one meeting on democratic life every season, through which we promptly exchanged ideas and strengthened unity.

(2) We have strengthened the building of the party's grassroots organizations. Since 1978 we have one after another established and formulated the party's "system of three meetings and one class," "system of regular analysis of the conditions of contingents of party members," "system of developing programs for party members," and "system of work for party branches." By implementing these systems, great changes have been brought to the appearance of the party's grassroots construction. The role of the party branch as a fighting bastion is stronger than before and the exemplary role of the party member as a vanguard is more prominent.



(3) We have strengthened the organizational construction of leading groups at all levels. We stressed the organizational construction of leading groups as essential, thereby enabling them to take a step toward suiting the demands of the four modernizations. As for groups that have relatively more problems and do not work as one, we adopt the method of understanding circumstances and resolve problems individually. We have reorganized a total of 239 cadres of the factory department level; selected and substantiated 34 young cadres who have professional knowledge and organizational ability, 205 reserve cadres of the factory department level; and have made proper arrangement for a group of veteran cadres. To suit the demands of the four modernizations, we have selected and transferred in a planned way 1,600 cadres to study at party schools above the corporation. At the same time rotational training has been generally given to over 900 of the corporation's party branch secretaries.

(4) We have strengthened management education for party members. In dealing with the problems of high members of new party members and poor basic knowledge in the party, since 1979 we have operated a total of 1,131 terms of training classes for party members and carried out repeated and rotational training among more than 15,000 party members of the corporation. The political quality of party members have generally increased and a large number of fine party members who are not for fame and wealth but who dare to suffer hardship and fight tough battles have suddenly appeared.

Third, we have strengthened the leadership for ideological and political work. After the division of labor between party and administration has been carried out, we concentrated most of our energy and exerted great efforts on conscientiously strengthening the party's ideological and political leadership of the enterprise so that many units have basically altered their former tendency to ignore ideological and political work. Leading comrades of party committees have personally involved themselves at the grassroots level to investigate and study, analyze typical cases, and convene forums to understand and master the ideological trends of staff workers. They have also dealt with the ideological realities of staff workers, extensively developed diverse forms of propaganda education, paid attention to combining ideological and political work and concern for the lives of the masses with resolving actual problems, thereby achieving relatively good results and mobilizing the enthusiasm of staff workers.

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## FINANCE AND BANKING

### CHANGES IN RURAL SAVINGS DEPOSITS REPORTED

Beijing ZHONGGUO JINRONG [CHINA'S BANKING] in Chinese No 9, 4 May 82 pp 32-33

[Article by Zhuo Ran [0587 3544], of the China Agricultural Bank Hanzhong Prefecture central branch: "New Trends in Rural Savings Deposits"]

[Text] Finding out how rural savings have changed is important for the management of rural savings deposits. At present, we should give attention to the following changes in rural savings.

#### Changes in the Composition of the Sources of Savings Deposits

Rural savings deposits come mainly from three types of commune members' currency holdings: petty cash, deposited funds, and distributed income. Petty cash comes from household sidelines income and family support remittances; deposited funds come from accumulations over the years and from inheritance; distributed income comes from the production team's income distributed at the end of the summer and fall seasons. Commune members use their currency holdings mainly in three ways: to pay for production expenses, to pay for living expenses, and to save. The money required for production and living expenses can be divided into two parts: standby funds that enter into circulation gradually, and petty cash that can be used any time. Savings can also be divided into two parts: deposited funds and savings deposits. In terms of deposit sources, standby funds for use in paying living and production expenses are mainly the source for demand deposits; savings are mainly the source for time deposits.

At present, changes in the composition of the sources of rural savings deposits are characterized by "two increases and one decrease".

1. Decrease of year-end distributed income. This is due primarily to the introduction of the responsibility systems in the countryside, which has brought changes in the way the income of production teams is distributed. Among the 21,500 production teams in Hanzhong Prefecture, Shaanxi Province, 97 percent have adopted responsibility systems ranging from the assignment of

work to work groups, to the linking of remuneration with production, to the "shuang bao" system (assignment of plots to each household and fixing of output quotas for each household). This has led to changes in the form rural income is distributed--both the number of unified accounting units and the amount of year-end cash distribution have decreased. Take the 2 years 1981 and 1980 for comparison. In 1980, 200,220,000 yuan of income was collectively distributed among commune members of the prefecture, of which 33,580,000 yuan was in cash, averaging 69 yuan per person; in 1981, only 138,370,000 yuan was collectively distributed, of which 17,390,000 yuan was in cash, averaging 48 yuan per person, representing a decrease of 32 percent, 48 percent and 31 percent respectively. In the past, both money circulation and rural deposits sharply increased at year-end, showing a strong seasonal character; the decrease of year-end distributed income for the commune members, however, has changed this. The savings deposits of the commune members of this prefecture increased by 4,200,000 yuan in December 1979, by 2,890,000 yuan in 1980, and by 2,520,000 yuan in 1981, representing an average annual decrease of 19 percent over a 2-year period.

2. Increase of deposited funds. This is mainly due to: political stability and the popularity of the party's policies; banks and credit cooperatives giving more attention to the confidentiality of deposits, so that people no longer have to worry about their savings being disclosed; and higher interest rates for savings. In June last year, the Agricultural Bank of Liuba County launched a month-long campaign to attract savings deposits, receiving in 1 month's time some 44,000 yuan in savings deposits, most of which were from deposited funds.

3. Increase in petty cash. At present, the rural money supply is characterized by scattered cash holdings and large amounts of idle money. In Hanzhong Prefecture the rural people held 30,560,000 yuan in cash in 1978 and 45,600,000 yuan in 1981, an increase of an average of 15 percent per year. The commune members now have more cash in hand mainly because their household sidelines income has increased. Income from other occupations has also steadily risen. A survey of 128 peasant households in Zhengxian County showed that sidelines income last year was 10,685 yuan, an average of 83 yuan for every household. In short, since the introduction of the responsibility systems, the commune members have been receiving and disposing of their incomes at times quite different from before. Collectively distributed cash income at year-end has decreased, but cash income from production on assigned plots and from household sideline occupations has steadily increased.

#### Changes in the Composition of Savings Depositors

The following changes have taken place in regard to rural depositors: 1) The number of depositors has greatly increased. In 1981 the prefecture had 485,800 depositors, compared to 334,534 depositors a year earlier. 2) The

kinds of people who deposit have changed. In the past the people who deposited most were the cadres, well-to-do households, and the families of urban workers and cadres. Now, in addition to the above, the biggest depositors include households which have made top earnings, households which have turned around from poverty, and households engaged in contract work on assigned plots. The underlying reason is that there has been a basic improvement in the rural economy.

The depositors' psychology has also changed. In the past, peasants put their money in savings for three reasons: 1) they lived frugally and hated to spend money; 2) they were afraid to lose the money or spend it carelessly; 3) they wanted to save against accidents. Now, there are two additional reasons:

1. Now that life has become better, they want to plan and save to be able to build houses, buy more consumer goods and pay for wedding and funeral expenses. Among the 68 households surveyed by the Hanzhong and Nanzheng branch banks last year, 24 households planned to remodel their houses, 18 households planned to buy bicycles, sewing machines, etc and 12 households planned to have weddings.
2. Large numbers of "shuang bao" households want to invest in the land and sideline occupations they are managing, such as buying fertilizer and farm machinery, introducing advanced technology, and increasing the working funds. Last year the prefecture's peasants invested a total of 690,000 yuan of their own money in production. These peasants are beginning to plan and save against emergency needs.

#### Changes in the Amount and Time of Deposits

The changes are reflected in more time deposits, more long-term deposits and more large-sum deposits. From 1980 to 1981, the prefecture's rural demand deposit balance rose from 13,460,000 yuan to 18,860,000 yuan; the time deposit balance rose from 31,840,000 yuan to 38,720,000 yuan. The share of time deposits in total deposits rose from 61.2 percent in 1980 to 67.1 percent in 1981, and the share of demand deposits dropped from 38.8 percent to 32.9 percent in the same period. Part of the demand deposits were switched to 6-month or 1-year time deposits; part of the short-term time deposits (6 months, 1 year) was switched to long-term deposits (3 years, 5 years).

The number of both demand and time deposit accounts has increased, with the latter increasing faster than the former. According to a survey of the credit cooperative on Youfang Street, Nanzheng County, by the end of March 1982 the cooperative had a total of 194,560 yuan in deposits and a total of 2,147 depositors, or 88.9 percent of the total number of households in the commune. The average deposit account held 92 yuan, 11 yuan more than the 81 yuan a year earlier. The average demand deposit account held 73 yuan, 5 yuan more than the 68 yuan a year earlier; the average time deposit account held 168 yuan, 14 yuan more than the 154 yuan a year earlier. The number of large-sum deposit

accounts has also steadily increased. In 1980 this credit cooperative had 116 depositors with a deposit of 300 yuan or more; in 1981 it had 135 such depositors. In the same year, the number of the depositors with a deposit of 500 yuan or more increased from 18 to 24, and the number of its depositors with a deposit of 1,000 yuan or more increased from one to 10. A survey of the Baohe Credit Cooperative in Hanzhong city shows that of the total of 515,000 yuan in deposits in the cooperative, 75 percent of the demand deposit accounts held more than 100 yuan, and 68 percent of the time deposit accounts held over 300 yuan.

#### New Demands on Rural Savings Work

The changes in the sources of deposits, the types of depositors, and the amounts of deposits have brought new demands on rural savings work.

1. We must change our thinking. The change in the rural economy has brought about changes in rural savings deposits. We must pay full attention to these changes, and adapt our work to them. For example, instead of concentrating our effort on attracting the commune members' distributed income as we did in the past, we should give priority to their petty cash and deposited funds; instead of emphasizing seasonal deposits as we did in the past, we should try attracting deposits the year round.
2. Our institutional setup and the types of savings accounts we provide to the depositors should be adapted to new requirements. The peasants need to be able to deposit their money any time they wish and draw on their deposits any time they need to, without delay. Our savings institutional setup today cannot yet meet this requirement. Since the number of rural depositors has increased and the types of depositors have multiplied, we must provide diversified types of savings accounts to suit the different needs of different people. For example, the fixed-amount savings account is simple and easy to understand and is suited for commune members who are illiterate; the time/demand switchable savings account fits in well with deposits from the year-end distributed income; and the special savings account for retired rural personnel best meets the needs of the increasing number of retired cadres, staff members, workers, and military personnel. We should run pilot projects on each of these types of savings accounts and evaluate their advantages and disadvantages and promote them gradually.
3. We must strengthen our services and public information. Through courteous, solicitous and civilized service we should relieve more peasants of their worries and make them willing to deposit their savings. We should regularly and effectively inform the public about the advantages of saving money, the virtue of being industrious and thrifty and keeping money in reserve, and about the importance of accumulating funds for the four modernizations program, doing our best to arouse the enthusiasm of the peasant masses to join in savings.

## FINANCE AND BANKING

### BRIEFS

GUANGZHOU WAGES, SAVINGS--In the past few years, the income of staff members and workers in the urban areas has risen, while public savings in both city and countryside have reached more than 1.3 billion yuan. More recently, due to wage increases of the majority of staff members and workers as well as the practice of a bonus system and commodity price subsidies, their average wage throughout the municipality has increased steadily year after year. The figure was 710 yuan in 1978, 824 yuan in 1979, 937 yuan in 1980, and 1,017 yuan in 1981. Compared with 1978, their average wage in 1981 increased by 307 yuan, or 43.2 percent. According to a typical investigation, the number of urban working households, whose individual members each had an average monthly income of more than 50 yuan, has risen from 9.2 percent in 1977 to 54.5 percent in 1981. On the other hand, those individual members with an average monthly income of less than 35 yuan has dropped from 59.7 percent to 8 percent during the same period. According to an investigation of its staff members and workers, involving 433 households with 2,054 members, made by the Xingqun Pharmacological Factory comparing 1978 and the present year, family employment increased by 127 persons, from 1,271 to 1,398 persons; their aggregate income rose by 47,900 yuan, from 67,000 to 114,900 yuan; and their bank deposits swelled by 14,000 yuan, from 17,000 yuan to 31,000 yuan. As the earnings of most workers' families have increased at various levels, the number of individuals in many units who need hardship subsidies has greatly decreased. For example, Plant 3518 issued an average of nearly 10,000 yuan of hardship allowance to its staff and workers in 1977 and 1978, because the factory had nearly 100 households who were in difficult straits and who needed subsidies regularly. However, by 1981 the amount of hardship subsidies issued to troubled working households had dropped to 3,000 yuan, the lion's share of which was for medical purposes and emergencies. At the same time, the entire savings of urban and rural inhabitants have increased by a large margin. At the end of 1981, the total deposits reached 1.04 billion yuan, an increase of 1.1 times compared with the 1978 figure. On the average, each individual's savings amounted to 387 yuan. Deposits made by members of agricultural cooperative societies reached more than 280 million yuan, representing an increase of 2.4 times during the corresponding period. On the average, each individual saved 97.5 yuan. [Text] [Guangzhou GUANGZHOU RIBAO in Chinese 24 May 82 p 1] 9300

GSC, 4010, 016

LIAONING URBAN SAVINGS DEPOSITS--Shenyang Municipality, in Liaoning Province, prefulfilled the annual savings deposits plan as of 10 August. The city's savings deposits increased by 114 million yuan from January to 10 August. [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 14 Aug 82]

GANSU SAVINGS DEPOSITS--Since the beginning of 1982, rural savings deposits in Gansu Province have steadily increased. By the end of July, rural savings deposits had reached 410 million yuan, an increase of 53 million yuan--34 percent over the corresponding 1981 period. [Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 14 Aug 82]

LIAONING SAVINGS DEPOSITS--By the end of June 1982, the balance of rural savings deposits of Liaoning Province reached 1.12 billion yuan, more than the total sum of the past 30 years. According to the statistics, in 1981, peasant's per-capita income from the collective was 125 yuan, showing an increase of 36.9 percent over 1978, thanks to the implementation of the rural production responsibility system and diversified economy. Each peasant netted 109 yuan of income from household sideline production on average in 1981, amounting to 35.7 percent of the total household income, thanks to the reform of the economic structure that ensures the peasants' earnings all year. In 1981 the total commodity value of the rural and urban markets throughout the province was 6.33 billion yuan, an increase of 21.7 percent over that of 1978, resulting from brisk market business and price stability. At present, about 4 million households in the province have savings, with a per capita average of 49 yuan. [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 17 Aug 82]

CSO: 4006/612

## MINERAL RESOURCES

### CHARACTERISTICS OF URANIUM DEPOSITS DISCUSSED

Beijing HEKEXUE YU GONGCHENG [CHINESE JOURNAL OF NUCLEAR SCIENCE AND ENGINEERING] in Chinese No 1, 1982 pp 81-85

[Article by Liu Xingzhong [0491 5281 1813] of the Second Ministry of Machine Building: "The Types of Uranium Deposits in Our Nation and Characteristics of Their Geological Mineralization"]

[Text] I. Reviewing the Course of Understanding Our Nation's Uranium Deposits

Since the founding of the nation, our country has carried out large-scale general surveys and exploration of uranium deposits and many types of mineral deposits of uranium. The granite type and the sandstone type were the two that were found the earliest. Great development was realized in exploring the volcanic type during the 1970's. The carbonaceous-siliceous mudstone is a type that possesses special meaning. Generally speaking, the understanding of the types of mineral deposits of uranium in our nation went through three stages:

The first stage (the latter half of the 1950's) was the beginning stage of geological work in seeking uranium deposits. Because geological work to prospect for uranium was a blank before liberation, in the beginning, the direction of seeking such deposits was not very clear, and we could only rely on the types of mineral deposits of uranium already discovered in the world and their patterns of distribution, combined with scattered information about our nation's deposits, to plan and deploy forces to conduct general surveys. At the time, Southern China and the Northwest were considered regions with the brightest future. In Southern China, deposits were mainly sought in granite and emphasis was placed on the outskirts of the rock body. During general surveys, excavation was usually carried out from the edges of the rock body inward 500 to 1,000 meters. Some abnormalities were discovered, but after

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analysis, most were found to be of the Skarns type. Mineralization was scattered and did not have any industrial significance. Later, while exploring the inner part of the rock body, a group of abnormalities were found by chance. These abnormalities were mainly produced in sandstone along diabase veins, silicified fragmented zones and contact zones. Among them, the spots in the silicified fragmented zones were the best. In 1958, there was already a definite scale of mineralization. So they were called "hopeful" deposits. This was the first uranium deposit found in our nation's granite. During this stage, the sandstone type of the mid-Cenozoic and the fragmented zone type in the siliceous strata of the Permian period and spot deposits of the five elements were also found in Southern China. Kolm, volcanic rock and quartzite type deposits were found in other regions of our nation. The most important breakthrough during this stage was finding the granite and sandstone types (including the kolm type), which established the foundation for future work in seeking such deposits.

The second stage (1960's) was the stage of overall development in prospecting work in our nation. During this period, good results were realized in prospecting deposits in granite. Uranium mineralization formed by many factors controlling mineralization was found inside the rock body. Deposits of uranium possessing industrial significance were also found in carbon-containing sandstone and carbonaceous callys on the outskirts of the rock body. At the same time, deposits of uranium with alkaline hydrothermal characteristics were found in the Caledonian rock body. Deposits of uranium of the carbonaceous-siliceous mudstone type that were changed under the pressure of the strata and later overlaid were also found in the Sinian-Cambrian periods and the geostrata of the Devonian period. Deposits of uranium possessing industrial significance were verified in the volcanic rock of the Jurassic-Cretaceous periods. Positive geological achievements were also made in kolm and sandy psephyte of the neo-Tertiary period.

The third stage (1970's - present) was the stage of great development and improvement. Exploration in granite was undertaken in greater breadth and depth. Uranium mineralization possessing industrial significance was found in all of the granitic rock bodies of different geological periods. The oldest geological period of granite was the peak neve period, and the rock body producing the most uranium was that of the early Yanshan period. New breakthroughs were made in prospecting for uranium in volcanic rock. Many types of mineralization were discovered in medium acidic lava, volcanic clastic rock, secondary volcanic rock, volcanic breccia and psephyte produced by hidden explosions. Carbonaceous-siliceous mudstone type deposits of uranium were found not only in the geostrata of the Sinian-Cambrian and Devonian periods, but uranium deposits of industrial significance were also found in the geostrata of the Silurian, the Carboniferous and the Permian periods. During this stage, progress was realized in exploring the sandstone type deposits of uranium and better deposits of uranium were found mainly in the basins with

granite as the base and volcanic rock as the overlying stratum. While expanding the known types, deposits of uranium related to mixed lithification were found in the metamorphic rock of the lower Proterozoic era.

## II. The Types of Deposits of Uranium and the Characteristics of Geological Mineralization

At present, the known types of deposits of uranium in our nation are mainly granite, volcanic rock, sandstone (including kolm), carbonaceous-siliceous mudstone, uranium containing phosphorous rock, iron containing quartzite, quartzite, Skarns, chorismite and weathered sedentary type. The first four types are the main ones. Their characteristics of geological mineralization are as follows:

1. Granite type. The deposits of uranium in granite are our nation's most important type of uranium ore. The bodies of granite-containing uranium are widely distributed in our nation and there are many types of mineralization, mainly microgranular quartz (or chalcedony type), alkaline substitutes, fluorspar type, and clay type. The main characteristics of the bodies of granite that produce uranium are the following: The rock body contains a lot of uranium, generally reaching 10 to 40 ppm. It contains crystalline uranium ore. The rate of precipitation of uranium is high, and the thorium/uranium ratio is less than 1. The geological periods of the rock bodies producing uranium are both old and new, but the main period is the rock body of the Yanshan period. The geological periods of the uranium-producing rock bodies possess only regional significance. The area of stripped rock is generally larger than 100 to 200 square kilometers and some may reach over 1,000 square kilometers. Autometamorphism of the rock body is more developed. Mineralization of uranium is controlled by rift tectonics, and the deposits (regions) are frequently produced in the region sandwiched between two large regional rift zones of quartz. Mineralization of uranium is deposited in low order and low grade rift tectonics.

Hydrothermal alteration is visible. Alteration in front of the deposits is mainly albitization and the formation of hydromica. Hydrothermal alteration during the period of mineralization is mainly characterized by the formation of anhydroferrite, fluorspar, pyrite, silicification and clay grouting. The composition of the ore and minerals is simple. Pitchblende is the main uranium ore. There are less veinstone minerals, mainly microgranular quartz, and there are few associated elements, generally not possessing any value for comprehensive utilization. There is a relatively large time difference between the age of formation of uranium ore and the age of the primary ore rock. The formation of uranium ore in the rock bodies of different geological periods has a strong simultaneity. The age of mineralization of uranium ore in granite of Southern China is generally less than 100 million years, equivalent to the period of formation of the Cretaceous-Tertiary red basin. The

deposits of uranium possessing the characteristics of ore rocks on the outskirts of the rock body are mostly slight metamorphic ore and argillaceous rock of the pre-Devonian period. Their horizontal distance from the rock body is generally less than a few hundred meters.

2. Volcanic rock type. Volcanic rock deposits of uranium are mainly distributed in our nation's eastern regions. Their characteristics are as follows: The geological periods of the volcanic rocks containing uranium are the Permian, the Jurassic, and the Cretaceous. The Jurassic is the main period. Uranium mineralization has also been discovered in metamorphic volcanic rocks of the pre-Sinian period. The main regional geological background for mineralization is the Caledonian fold in Southern China, the Hercynian fold of the Northeast and the Northwest and the activated region on the edges of the North China platform. The lithological character produced is mainly medium acidic lava and volcanic tuff, and deposits of uranium have also been discovered in secondary volcanic rocks, pyroclastic of hidden explosions in the main conduit of the volcano, breccia and alkaline lava. Mineralization is controlled jointly by the strata and tectonics. The Neocathaysian tectonic in Southern China is an important tectonic that controls mineralization. It trails and forms composite tectonics with the rift tectonics at the base of the basin and volcanic tectonics. It is a favorable position for mineralogenesis. Mineralization is controlled by many types of boundary faces. The occurrences of mineralization in the ore body are complex, and they are manifested in many forms and in many places. The hydrothermal alteration is similar to that in granite. During the early period, hydrothermal alteration was mainly albiteization and the formation of hydromica and dickite. They are important indicators for prospecting. The associated elements are complex, and they are frequently associated with such elements as molybdenum, silver, lead, zinc, phosphorus and thorium. Some elements are of a grade suitable for comprehensive utilization. The age of mineralization is generally between 140 million and 100 million years, and some individual mineralized deposits are less than 100 million years old. The time difference is less than that of granite type deposits.

3. Sandstone type (including kolm type). Our nation's sandstone type deposits of uranium and those of the kolm type are mainly produced in the basin of the meso-Cenozoic era. The sandstone type is produced in the red tuff formation and the kolm type is produced in the dark colored tuff formation. Their characteristics are as follows: Mineralization of the red tuff formation is deposited primarily in the strata of the Cretaceous and the early Tertiary and secondarily in the Jurassic period. Dark fragmental uranium formation is found primarily in the middle epochs of the Jurassic period and the late Tertiary period, and secondarily in the early Tertiary period and the later epochs of the Jurassic period. Such formation contains ore rock characteristics while the deposits of uranium in the red tuff formation are mostly produced in feldspar-quartz sandstone, granitic sandstone, sandy

psephyte, psephyte, aleuvite and mudstone. Uranium deposits in the dark clasolite formation are mainly produced in the poor quality coal seam and rich coal seam containing clasolite. At the same time, they are also produced in sandstone and sandy psephyte. The ore body is bedded, quasi-bedded and irregular and it is produced in a multilayered structure. The red clasolite formation generally has singular deposits of uranium and material composition is simple. The dark clasolite formation contains selenium and germanium and can form uranium-selenium deposits and uranium-germanium deposits. These are caused by a concentration of sedimentary rock formations and by reformation and concentration of uranium of the hypergene stage. The latter frequently serves an important function in the formation and concentration of deposits.

4. Carbonaceous-siliceous mudstone type. Its characteristics are as follows: It contains many mineral horizons deposited in the geostrata of the Sinian-Cambrian, the Silurian, the Devonian, and Carboniferous and the Permian period. The regional geological background producing it is mainly the surroundings of ancient upwarping of the Caledonian fold in Southern China and its depressions and the depressions in the Caledonian fold in southern Qinling. The ore rocks are characterized mostly by transitional rocks of carbonatite, siliceous rocks and mudstone. Mineralization is produced in favorable strata. It is controlled by the fragmented zones between the strata or shear tectonics and crevasses. The shape of the ore body is generally simple, mainly of the conformity type and manifests a quasi-bedded shape, lens shape and irregular shape. The material composition of the ore varies in the degree of complexity and it is frequently associated with mercury, phosphorus, lead, zinc, copper, nickel, molybdenum and yttrium. It can form uranium-mercury deposits, uranium-phosphorus deposits and multiple metal-uranium deposits. The hydrothermal alteration is very weak. Formation is mostly complex. Superposition and reformation have served importantly in concentrating mineralization. The age of mineralization is between 120 to 20 million years. The older the period of the rock strata, the greater the time difference.

The time of formation of the four major types of uranium deposits in Southern China shows an obvious simultaneity, mainly the upper Jurassic-early Tertiary, and it is especially concentrated in the upper Cretaceous-early Tertiary. Whether mineralization of uranium in the uranium-containing strata occurred in the Sinian-Cambrian period, the Devonian-Carboniferous-Permian period or the granite body of different geological periods, or in the volcanic rock and red sandstone of the Jurassic-Cretaceous period, the period of ore formation was always in the upper Jurassic and the early Tertiary. This shows that mineralization of uranium and the primary ore-containing rock have a relatively large time difference. The older the period the greater the time difference. For example, the geological period of the formation of the granite body during the peak neve period is 760 million years, while the age of mineralization of uranium is 46 million years. The rock bodies of the Caledonian Period, the Hercynian period, the Indochina period and the early Yanshan period all have an

age of mineralization less than 100 million years. The period of ore formation of granite in Southern China is generally divided into three periods: 87 million years, 67 million years and 47 million years. The period of ore formation of the carbonaceous-siliceous mudstone type and the period of ore formation of the granite type show a similar situation. The geological period of the ore-containing stratum of the geostrata of the Sinian-Cambrian period is 720 million years to 570 million years, while the age of mineralization of uranium is 23 million years to 120 million years. The ages of mineralization in the Permian-Carboniferous-Devonian period are generally all less than 100 million years. The age of mineralization of volcanic rock of the Jurassic period is from 140 million years to 100 million years, and the time difference of the ore rocks is less. The age of mineralization of uranium in sandstone of the Mesozoic era and the Cenozoic era and in kolm is also only several dozen million years. The above information fully shows that the time of mineralization of uranium in Southern China and the time of formation of the geostrata of the Cretaceous-Tertiary are generally the same. The spatial distribution of uranium deposits and that of the red basin are also in harmony, almost produced in association. The formation of mineralization of uranium is slightly later than the red strata. In summary, the mineralization of uranium may be due to the activation and concentration of uranium in rocks rich in uranium above the crust. The Cretaceous-Tertiary climate was hot and dry. Disintegration due to weathering on the continent was very developed. The atmosphere contained a relatively abundant amount of free oxygen. In addition, violent activity of downthrown fault tectonics was favorable to oxidation, transportation and reconcentration of uranium. The uranium deposits of the volcanic rock type may also be related to hydrothermal activity of the deep parts of the crust because of the relatively small time difference in the ore rocks. Besides the above periods of ore formation, there are data and information on two other periods. Whether they represent two other periods of ore formation or not cannot be determined yet because of insufficient information. The ages of the isotopes in quartzite, biotite quartz-schist and chorismite of the Liaohe period of the lower Proterozoic era in our nation's Northeast are 1.919 billion years and 2.177 billion years. The age of mineralization of uranium is 1.898 billion years. The mineralization of uranium is related to the formation of chorismite and this is our nation's oldest mineralization of uranium. The age of mineralization of uranium in a certain granite body in Southern China is 375 million years. The age of mineralization of uranium of the alkaline transformation era in the Northwest is 350 million years to 410 million years. The ages of mineralization of uranium in the two regions described above may possibly reflect another period of uranium ore formation in our nation.

The distribution and formation of mineralization of uranium in Southern China are closely related to the red stratum. This characteristic is similar to the conditions of uranium ore formation of some areas of such ore in foreign nations. For example, the granite body producing uranium in France is of the

Carboniferous period (300 million years-315 million years), while the age of mineralization of uranium is 240 million years to 270 million years, equivalent to the time of formation of the red strata of the Saxonian continental facies and the period of downthrown faulting of the Hercynian Range. Also for example, in the nonconformity vein type of northern Australia, mineralization was produced in carbonatite sandwiched between the carbonaceous and pelitic formations of the Cassiar period of the early Proterozoic era. The age of the geostrata is 1.7 to 2.4 billion years. The overlying cap of the ore-containing layer contains red sandstone of the continental facies of the Carpentaria period of the mid-Proterozoic era. The age of mineralization of uranium is 1.6 billion years to 500 million years. The mineralization of uranium occurred much later than the primary rock. The condition of ore formation of the nonconformity vein type of the Athabasca Basin in Canada is basically similar to that in Australia.

### III. Comparison of the Types of Uranium Deposits in Our Nation and the World's Major Types of Uranium Deposits

A comparison of the types of uranium deposits discovered in our nation and the world's major types of uranium deposits shows that there are many similarities, but there are also great differences. Because of different regional geological conditions and the different geological conditions of formation of uranium ores, we should differentiate between the different types discovered in different regions of various nations. In the following, the types of uranium deposits in our nation are compared to the world's major types in three aspects.

#### 1. Comparison of the Types of Deposits

The greatest characteristic of the types of uranium deposits in our nation is that the deposits are hydrothermal vein types of mainly granite and volcanic rock, while the world's major types of uranium deposits are sandstone, quartz-gravel-psephyte, nonconformity veins, porphyritic uranium ore (i.e., anatexis), calcrete, ferruginous quartzite (ferro-uranium), copper-uranium and uranium-containing limestone. The primary ore-containing rock of the types described above is mainly metamorphic rock of the pre-Cambrian period. Its reserves constitute over 60 percent of the total reserves of uranium ore in the world. There are many types of mineralization. They frequently form large uranium deposits. Quartz-gravel-psephyte, nonconformity veins, porphyritic uranium ore and copper-uranium ore, which constitute a large percentage of the reserves have not been found in our nation. At the beginning of the 1970's, Australia discovered the calcrete type, but we have not yet studied this type. Although the sandstone type (including the kolm type) has been discovered, progress is not rapid. It can be seen from the comparison of the types of deposits that the types discovered in our nation so far are not sufficient. The scope of prospecting is not broad enough. In particular, few deposits in

the geostrata of the pre-Cambrian period, which contains massive uranium deposits, have been found in our nation, and this is worth our conscientious study and attention.

## 2. Comparison of Uranium-Containing Strata

The general characteristic of the geological periods of our nation's uranium-containing strata is an abundance of new geostrata and a scarcity of old geostrata. Our nation's oldest uranium-containing stratum is the ferruginous quartzite of the Anshan epoch of the Archaean period. Above it are the strata of quartzite of the Langzishan formation of the Liaohe period of the lower Proterozoic, quartzite of the early part of the Sinian epoch, carbonaceous-siliceous mudstone of the Sinian-Cambrian period, siliceous limestone of the Bailongjiang epoch of the Silurian period, Sipai formation of the Devonian period, limestone-mudstone-sandy shell rocks of the Yujiang formation, the Yingtang formation and the Liujiang formation, limestone of the Zimenqiao formation and the Shichengzi formation of the Carboniferous period, siliceous rock of the Dangchong formation of the Permian period, sandstone of the Triassic period, kolm and sandstone of the middle and early epochs of the Jurassic period, volcanic rock and volcanic sedimentary rock of the upper epochs of the Jurassic period, sandstone and kolm of the upper and lower Cretaceous period and the new and old Tertiary period. Among them, the strata of the Sinian-Cambrian periods and the mid-Cenozoic era are the most important.

Compared to the uranium-containing strata of the world, there is a definite difference. There are many uranium-containing strata in the world, but they are mostly concentrated within three geological periods: the first is the geostrata of the pre-Cambrian period, the second is the geostrata of the middle and upper Palaeozoic era, and the third is the geostrata of the mid-Cenozoic era. The uranium-containing strata deposited in the pre-Cambrian period are the quartz-gravel-psephyte strata of the Witwatersrand period (South Africa) and the (Aphibia) period (Canada) of the lower Proterozoic era in South Africa and Canada. The ore-containing strata of the nonconformity type in Australia and Canada are the Cassiar epoch and the (Aphibia) period of the lower Proterozoic era. The uranium-containing stratum of the sandstone type in Gabon is also in the geostrata of the Proterozoic era. Ferruginous quartz of the Soviet Union is also in the lower Proterozoic basin above the ancient shield. The middle and upper Proterozoic era also contains many uranium-containing strata. The main uranium-containing strata of the middle and upper Palaeozoic era are the sandstone of the Permian period in Europe and the sandstone of the Carboniferous period in Africa. The mid-Cenozoic uranium-containing stratum is the uranium-containing sandstone of the Triassic-Tertiary periods. The most recent geological period is that of calcrete produced in old river channels.



### 3. Comparison of the Periods of Formation of Uranium Ore

The periods of formation of uranium ore in our nation are mainly the upper Cretaceous-early Tertiary, while the period of formation of uranium ore of uranium deposits in the world, according to incomplete statistics, can generally be divided into five major periods of ore formation: lower Proterozoic, middle and upper Proterozoic, early Palaeozoic, late Palaeozoic and mid-Cenozoic. The ages of mineralization of uranium in the quartz-gravel-psephyte of the lower Proterozoic era are 2.25 billion years and 2.61 billion years. The maximum is 3.04 billion years, the oldest age of mineralization. The age of mineralization of uranium in Erian calcrete in Australia is only 27 million years, the youngest age of mineralization. Some uranium deposits are characterized by multiple-stage ore formation. For example, uranium deposits of the nonconformity vein type in Australia and Canada underwent a multiple-stage ore formation because of a long period of geological evolution and because of the effects of many kinds of geological factors, superposition and reformation. The period of formation of uranium ore is related to the evolution of the crust. The study of the period of formation of uranium ore in our nation must start out from the history of the evolution of the crust, and its genesis, development and laws of evolution must be studied. Special attention must be paid to the major geological events in the formation of uranium ore because they have great significance in guiding prospecting.

It can be clearly seen from the above comparison that the basic characteristics of the types of uranium deposits in our nation, the geological characteristics, the characterization of mineralization and the patterns of distribution have similarities with foreign uranium deposits and also great differences. Starting out from our nation's actual situation, future prospecting work should pay attention to problems in these two aspects: One is that in prospecting work to further enlarge the known metallogenetic types, we must mainly strengthen the study of the regional geological background and the characteristics and patterns of distribution of ore formation. We must utilize metallogeny and metallogenetic models to guide prospecting in order to discover more uranium deposits. The second is that we must actively seek new types. We must emphasize the search for those uranium deposits that have a large reserve and rich grades. We must grasp the "old" and "new" geological periods. The "old" means the metamorphic rock of the pre-Cambrian periods. We must break away from prospecting old geostrata. These are important topics with strategic significance. Grasping the "new" means prospecting the geostrata of the mid-Cenozoic. In exploring new types we must enhance the comparison with foreign uranium deposits and study their regional geological background and geological conditions of formation. We must select favorable regions with similar geological conditions for prospecting. When making comparisons, we must emphasize the study of key geological factors. We must make sure not to impose fixed limitations. We must start out from the actual situation in



our nation. We must study the common characteristics and we must pay attention to the unique characteristics. Our nation is extensive and the geological conditions are very complex. It has the geological conditions to form many types of uranium deposits. In addition, the intensity of general surveys and studies in some regions is far from sufficient, so the question of exploring new types should be given our utmost attention. We should discover more resources of uranium ore by expanding the known metallogenetic types and by exploring new types to make greater contributions toward building the "four modernizations."

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CSO: 4013/65

## MINERAL RESOURCES

### YUNNAN CONVENES TIN INDUSTRY CONFERENCE

Kunming YUNNAN RIBAO in Chinese 25 Apr 82 p 1

[Article: "National Tin Industry Scientific and Technological Working Conference Held in Yunnan Stresses Organizing Forces in a Concerted Attack on Key Problems With Science and Technology Leading the Way in Vigorous Development of the Tin Industry"]

[Text] The first national tin industry scientific and technological working conference, which was held at Geyang in Xidu on 20 April, proposed that the scientific and technological forces of factories and mines and of scientific research units be organized to develop large-scale socialist cooperation and to carry out a concerted attack on key problems extending across sectors and regions so that the nation's tin industry can be vigorously developed.

Vice-premier Fang Yi [2455 3015] of the State Council attended the conference and also presented an important address.

This conference, which was held under the joint auspices of the State Scientific and Technological Commission, the Ministry of Metallurgical Industry and the State Nonferrous Metals Bureau, pointed out that tin is one of the nation's major metal resources with volume of production and reserves in top place in the world. Tin is of very high economic value and occupies an important position in industrial production, the people's livelihood and in national defence and war industries. It is also one of our nation's traditional export goods. Since the establishment of the People's Republic of China, production in our nation's tin industry has changed from the primitive, backward mode of production handed down by the old society in which human labor and horses were used and in which indigenous methods and selective smelting were used. The scientific and technical personnel and workers on the front lines of the tin industry have in the course of long practice worked out a number of production techniques suited to the characteristics of our nation's resources so that tin smelting yields have been stabilized at a comparatively high level under conditions of complex concentrate constituents and lowering of quality. This has resulted in the quality of refined tin having achieved a reputation that has made it exempt from commercial inspection. However, insufficient knowledge about the laws and characteristics of development of the tin industry together with the 10 years of disruption and errors in work has resulted in a shortage of reserve ores in production mines and in a massive loss of production capacity. Because newly

established mines have not solved a number of important technological questions, they have not been able to make up for the loss in productive capacity. Selection and smelting yields have been low. There has been severe waste of resources. There has been excessive domestic consumption of tin and there have been mistakes in the utilization of yields. All these have resulted in large decreases in the volume of tin production and sharp decreases in volume of exports. Thus, we have been far from being able to meet the demands of expansion of production.

Science and technology must take the lead in the vigorous expansion of the tin industry. For this purpose, representatives and a number of well-known specialists from 107 units throughout the nation involved in the tin industry including production units, capital construction units, scientific research units, design units and universities and colleges, assembled at the Yunxi Company, which is the largest tin-producing base in the nation, to study how to apply science and technology in changing the passive state of the tin industry and to discuss how to transform the natural dominant position of tin into an industrial and economic dominant position. At the conference, the participants also exchanged views with members of the scientific research departments in the same fields from the Yunxi Company and other enterprises on conditions of cooperation in expanding scientific research activity. They also discussed and drew up a plan for the scientific and technological development of the tin industry during the "liuwu" [possibly, Sixth Five-Year Plan] period.

At the conference, emphatic stress was laid on the point that during the coming period the focal point of scientific and technological work must lie in intensifying geological work and mining technology for underground mines, in raising the selective smelting yield of tin, in changing the product structure and consumption structure of tin, in doing research on tin substitutes and on recovery and regeneration work and in developing scientific research work on comprehensive utilization of tin resources and environmental protection. Of these we must intensify geological prospecting in the Geyang and Dianxicheng ore zones of this province as well as scientific research work on developing engineering and mining methods and on comprehensive utilization of tin resources at the old Yunxi plant. Centering on the aforementioned key points, we must work out appropriate arrangements for research on these matters, for the key points that must be attacked and for matters of application and popularization. We must establish responsible units and personnel and organize the forces of factories, mines and other enterprises, of research units and of concerned units in institutions of higher learning and in the Chinese Academy of Sciences to put socialist division of labor and large-scale cooperation into practice to make a concerted attack on key problems. In respect to key points, we must strengthen management and make periodic inspections in order to get a firm grasp on conditions and to realize the requirement proposed for the nonferrous metal industry by the State Council of "making accomplishments within ten years."

Zhao Zengyi [6392 1073 4135], the deputy secretary of the Provincial CCP Committee, attended the conference and asked that Party and government departments at all levels work closely in coordination with each other in supporting and assisting the concerted scientific and technological attack on key problems and in working together to contribute to vigorous development of the tin industry.

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CSO: 4006/472

## MINERAL RESOURCES

### BRIEFS

NEI MONGGOL MINE RESOURCES--In the past 3 years, Nei Monggol region's geological front has scored achievements in prospecting for resources of energy, nonferrous metals and nonmetal minerals. Being rich in mineral resources, Nei Monggol region has exceptional advantages to exploit mineral resources. Of the 140 varieties of proven minerals in the world, 100 varieties can be found in the region. Reserves of over 70 varieties have already been proven and their reserves account for over 50 percent of their kinds present in China. Reserves of aluminium, rare-earth metals and agate rank first in our country. Furthermore, the reserves of rare-earth metals surpass the total in the world. Proven reserves of coal in the region have reached 190 billion tons and its prospective reserves are 1,000 billion tons, ranking second in China. To date, over 50 large and medium-sized mines have been exploited and utilized. [SK181053 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 17 Aug 82]

CSO: 4006/612

## INDUSTRY

### BENEFIT OF S&T DEVELOPMENT FOR INDUSTRIAL PRODUCTION NOTED

Tianjin KEXUE XUE YU KEXUE JISHU GUANLI [SCIENCE AND MANAGEMENT OF S&T]  
No 1, 1982 p 21-23

[Article by Chou Jinqun [0092 6855 3123], Chen Zhonghao [7115 0022 3185], Gu Wenxing [7357 2429 5281], and Shi Yangjun [2457 1135 6874] of the Science Commission, Shanghai: "Trial Analysis of Relationship Between Economic Benefits of Shanghai Industrial Production and the Development of Science and Technology"]

[Text] Science and technology are the crystallization of human intelligence resulting from a long period of social activity. They are also a kind of material force for people's understanding of nature, command of its laws, and their reconstruction of the world. An inseparable internal relationship exists between science and technology and economic and social development. They are mutually dependent and mutually promoting. The relationship between science and technology and economics has become even closer today. The dependency of economic development on science and technology has become even stronger. Science and technology have become a basic factor in increasing production, developing products, improving quality, lowering costs, reducing consumption, and developing new industries.

I. Since the founding of the People's Republic, Shanghai has paid attention to demonstrating the effects of science and technology in production construction. Gratifying results have been achieved, especially since the crushing of the "gang of four." A number of accomplishments have been achieved and relatively large economic benefits have been realized. Events have shown that scientific and technological developments have effectively promoted the development of our national economy. Greater economic benefit can only be achieved if science and technology are closely united with production construction.

The better results of Shanghai's industrial production are reflected mainly in the following areas:

1. Greater wealth has been created by a relatively small amount of manpower, funds, and materials. Based on 1980 statistics, the number of Shanghai's industrial workers, the original value of fixed assets, the net worth, and

the fixed circulating fund were respectively 4.28 percent, 5.09 percent, 4.6 percent, and 8.1 percent of the national totals. However, the gross industrial value of production, profits and taxes created, and exports were respectively 12.5 percent, 18.4 percent and 23.3 percent of the national totals. Industrial products shipped to other regions of the country accounted for about 45 percent of the total volume of such shipments between all regions. Thus, a relatively small labor force (consumption) realized relatively large useful results.

2. Major economic indicators are relatively advanced. In 1980, the production value per 100 yuan of original value of fixed assets, profits per 100 yuan of original value of fixed assets, taxes and profits per 100 yuan of funding, and profits per 100 yuan of production value were, respectively, 180 percent, 280 percent, 220 percent, and 45.7 percent higher than the national figures. The cash flow for every 100 yuan of industrial production value was roughly 44 percent lower than the national average. On the other hand, the turnaround of cash flow was 43 days faster than the national figure. In nudging the superior quality industrial products of the country in 1980, Shanghai received a total of 37 gold and silver awards, representing one-eighth of the total number of products receiving awards in the country. The labor productivity of industrial enterprises with ownership by the entire people was about 1.9 times higher than the national figure.

3. Large volumes of advanced technology and crucial equipment have been provided to the state. Large numbers of technical personnel and management personnel have been trained and transferred to other areas. And rich experiences in production and construction have been accumulated. The results of industrial production in Shanghai have been relatively good, and this is reflected not only in quantity and quality but also in the many new technologies created and invented, filling the voids in the country's industrial construction.

The relatively good economic results of Shanghai's industrial production are not separable from the support provided by the various provinces and municipalities in the country and the hard work of the staff members and workers of the entire municipality. In addition to the various other factors, we believe that there are two important reasons.

First, greater attention has been given to demonstrating the effects of science and technology in economic development. Shanghai has a stronger scientific research force. It has a large group of scientific and technical personnel and also an army of technically trained industrial workers. The scientific research units and the production departments join together to emphasize the use of research and to develop research. Of the capital construction investments in the municipality in the last 32 years, over 60 percent have been used in projects involving the adoption of new technology and the technical reconstruction of existing enterprises. With the improvement of the standards of technical equipment, a series of new changes have taken place in the wide application of new technology and new techniques and in the types and quality of products. In the metallurgical industry, the

types of steel have increased from 2 to over 1,300 since the beginning of liberation, and the number of specifications for steel materials has increased from 40 to over 22,000. The types of nonferrous metals have increased from 6 to 1,200. Products of the chemical industry have increased from 86 to over 22,000. The machinery industry has developed from repairing to manufacturing and from single items of equipment to complete sets of equipment. In terms of products, there are now 100 large categories and over 18,000 types. The level of large complete sets of equipment reaches 80 percent. An electronics industry, which did not exist at all previously, has now been developed and the items of equipment and parts now total more than 4,000. The light and textiles industries have developed continuously in the high and medium grade levels. More than 30,000 new products and new designs are now produced each year.

Second, greater attention has been given to the strengthening of scientific management. Scientific management in Shanghai has developed through exploration. Currently, the principal forms of this development are: (1) Production organizations have been adjusted to speed up the development of productive forces. For example, the Shanghai Clock and Watch Company originally had four wristwatch plants. All four plants produced mechanical wristwatches with duplication of products. Based on the standardized movement, the company organized its five groups of watches, including ladies watches, digital quartz electronic watches, indicator type electronic watches, and Diamond make mechanical wristwatches, for production in seven specialized wristwatch plants. At the same time, it equipped some small plants to specially produce watch cases and watch faces. Because of this specialization and division of labor and cooperative production, the development has been very rapid. In the past 4 years, the average yearly production has gone up by 1 million watches. (2) The management of individual indicators (consumption, cost, etc) of key enterprises has been strengthened. For example, management by quota was implemented for Shanghai's large industrial consumers of the principal energy resources--electricity, fuel oil, coal, petroleum products, and coal gas--and water. However, either a definite understanding is still lacking or experimentation has just begun in quality management, management of comprehensive periphery departments, and behavioral science management. Currently, the industry and communication production departments are pushing the implementation of the economic responsibility system. This is an important element for the strengthening of enterprise reorganization and for the improvement of management standards. In this area, summarization of experience and gradual improvement are still needed.

II. The maintenance of a definite rate of increase in Shanghai's industrial production during the period of readjustment is a problem that must be vigorously resolved. We believe that one extremely important way is to fully demonstrate the effects of the science and technological factors, expedite the promotion of results of applied research, and strengthen the technical reconstruction of existing plant enterprises. For this purpose, the following policy measures must be conscientiously studied:

1. Simultaneous With the Readjustment of the Economic Structures, Continue to Properly Carry Out the Readjustment And Reform of Shanghai's Scientific Research Organizations

Looking at Shanghai vertically, a rational system of linking still does not exist between basic research, applied research, and developmental research. The phenomenon of ratio imbalance has not been notably changed. Looking at it horizontally, cooperation and coordination are still rather weak between the national defense system, the Academy of Science, various industry ministries, the higher education system and the local area. To correct this unbalanced and irrational situation which has existed over a long period of time, the readjustment of scientific research organizations should be accelerated based on the requirements for Shanghai's economic readjustment and development and city and municipality reconstruction and construction. Planned, step-by-step cooperative study, adopting organizational and economic measures, should be carried out by stationing research personnel from the Academy of Science, national defense, and higher education systems and their holding concurrent positions in the local industrial production and research departments. Or, this cooperative study may be carried out by transferring these personnel to work in the local industrial departments. Investment of funds should be used to vigorously support scientific and technological research and basic scientific and technical work. Personnel engaged in applied science and technology research should be encouraged to seek out subjects in production for study in order to make greater contributions to the solution of key problems in economic construction and thus better serve our social and economic development.

## 2. Surrounding the Word "Use" of Scientific and Technological Results, Establish and Thoroughly Carry Out Related Economic Policies

Since 1978, over 2,000 important scientific research results have been achieved on the various battle fronts of Shanghai. Except for a small number already used in actual production which have entered the commercial stage, a significant portion of these results are still in the "gift, sample, and display product" stage. In 1980 the Shanghai People's Government allocated special funds as a subsidy to promote application of over 60 scientific and technological results. Some of these results were established in production in that year, and relatively notable economic benefits have been achieved. It is estimated that actual benefits several times the investment will be realized this year. This experience shows that the word "use" is valuable in scientific and technological results. Only by adopting suitable measures to encourage the application of these results can economic and social effects be produced.

The various science and technology economic cooperation exchange conferences tried in Zhejiang, Tianjin, Wuhan, and Shanghai and their technical market reports are good means for the mutual exchange of information between production departments and scientific research units and for the speeding up of the promotion of application of scientific and technological results. At present, economic policy problems are the more acute problems. Many difficult problems are regularly encountered in actual work. A significant portion of the plants do not have sufficient motivation for technical innovation and the application of scientific research results. This type of problem must be solved in order to widen even more the channel for the application and promotion of scientific and technological results. Appropriate readjustments



must be made in the policies of finance, investment, pricing, taxation, credit, foreign trade, and reward.

According to estimates made by some comrades, if efforts are made and the scientific and technological results existing in Shanghai but not yet used are applied to industrial production and economic construction, they will create each year material wealth for the state amounting to 1 billion yuan. How to accomplish this is something we must study conscientiously.

### 3. Achieve Technology Transfer In and Out and Vigorously Promote Inter-provincial and Intramunicipality Scientific Research and Production Alliance

Since last year, a group of alliances of this type have appeared. A preliminary summary shows that they are primarily in nine forms: (1) research institutes operated by plants; (2) plants operated by research institutes; (3) plants and institutes united to develop products and markets during readjustment; (4) operation of research institutes as technical development centers for specialized companies; (5) economic alliance for comprehensive resources utilization in which a research institute is a member; (6) long-range cooperation between research organizations, universities and specialized institutions, and plants directed to selected subjects and the goal of application of results; (7) extensive practice of unification of technology and knowledge within and outside the municipality aimed at transfer of results; and (9) cooperative digestion and absorption of imported technology and joint creation of new and suitable technology. [(8) is missing in original text.] Actual practice has proven that the scientific research and production alliance is an effective form of organization to realize technology transfer from the laboratory to the plant and push forward production development. It must be vigorously promoted.

The development of scientific research and production alliances should also be promoted across provinces and municipalities. The transfer of knowledge and technology to sister regions by Shanghai and the practice of alliance between scientific research and production represent the propagation of strengths and avoidance of weaknesses and the road to develop superiority. In this manner, new production capabilities can be created by using less investment or not using any investment at all, and new wealth is created for the state. All parties to the alliance will be greatly benefited.

The extensive practice of scientific research and production alliance within and outside the municipality will necessarily increase the rate of creating foreign exchange by existing export products. At the same time, it will also necessarily create new technology and products for export, which will break into the international technology and product markets. To reach this goal, in addition to forming alliances between regions and between scientific research and plant enterprises and foreign trade departments, important reforms must also be carried out in foreign trade systems and policies, and the motivation of the scientific research units must be further encouraged so that many mature technology-concentrated products will enter the international markets.

(Edited by Shen Zongqi [3476 1350 3825])

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CSO: 4013/21

## INDUSTRY

### ECONOMIC METHODS IN MANAGING INDUSTRIAL RESEARCH ANALYZED

Tianjin KEXUE XUE YU KEXUE JISHU GUANLI [SCIENCE AND MANAGEMENT OF S&T]  
in Chinese No 1, 1982 pp 23-25

[Article by Wang Cailiang [3769 2088 5328] of the Department of Science and Technology, Ministry of Petroleum: "A Number of Problems in Managing Industrial Research With Economic Methods"]

[Text] Various economic laws must be followed in order to operate socialist enterprises properly. Similarly, socialist economic laws must also be followed in order to operate socialist research units properly.

According to Stalin's definition, the basic economic law of socialism is to use methods to continuously expand and perfect socialist production on the foundation of a high level of technology in order to guarantee the material and cultural requirements of satisfying to a maximum degree the constant growth of the entire society. It points out the objectives and basic means for socialist production. At the same time, it also points out the basic task of science and technology research. This is to provide the most advanced and most suitable technology for the national economy in order to guarantee the continuous growth and improvement of socialist production and directly or indirectly to satisfy the material and cultural requirements for the constant growth of society. This requires that research units maintain a close relationship with production, provide production with scientific and technological results which are technically advanced and economically rational, and assure that these results are applied to production as rapidly as possible and are transformed into productive forces. It also means that particular attention to technical and economic results, improvement of the quantity and quality of scientific research results, and the shortening of scientific research cycles is required.

The laws of planned proportionate development require that the socialist economy develop on a coordinated and planned basis with a certain suitable proportion. The development of science and technology, the development of scientific research personnel, the establishment of scientific research institutions, and the scientific research budget outlays must be appropriate to the development of production construction. A definite proportion must be maintained between basic research, applied research, and developmental

research. An appropriate ratio should also exist between scientific research, technical, management, and supporting personnel. In the determination of scientific research projects, consideration should also be given to deciding between long range and short term, between strategic and tactical, assigning priorities and paying attention to cooperation and supplementation, so that scientific research results are easily adopted in production.

Socialist economics is also commercial product economics. It should be constrained in the same manner by the laws of value. Scientific research must also be commercialized and socialized. A contract between scientific research and economics should be developed. Results should be transferred with compensation. Technical services should be rewarded. The principles of mutual support and mutual benefit should be followed to speed up the development of science and technology and to speed up the blossoming of scientific and technological accomplishments in production.

Socialist economics must follow the principle of material benefit. The authority of scientific research units for self-determination should also gradually be expanded. The economic benefits of the state, the unit, and the staff members and workers should all be given consideration, so that the large number of staff members and workers will be more concerned with the development of the collective research capabilities and will produce more accomplishments.

Production relations must be appropriate to the levels of development of the productive forces. This is the common law of all societies. The scientific research work in modern industrial departments represents the most advanced productive force. The practice of small productive economies of "not asking for help in ten thousand things," "large and totally self-reliant," and "small and totally self-reliant" must be broken. The development should be in the direction of specialization and socialization.

In summary, socialist scientific research work must follow the requirements of socialist economics in order to develop smoothly and to achieve a greater effect in socialist economic construction. To do the opposite would be to incur penalties and setbacks.

Under the initiative of the State Scientific and Technological Commission, since 1978 the areas of Sichuan, Shanghai, and Beijing and organizations of the Academy of Science have operated experimental centers at their research institutes for the management of scientific research with economic methods and expanded authority for self-determination. While guaranteeing the completion of the various scientific research tasks assigned by the state, these experimental center units have the authority to accept various contractual scientific research tasks entrusted by related units based on the needs of production construction and the market. They have the authority to practice transfer of results with compensation and a payment system for various types of service work. Since last year, based on regulations prescribed by the Ministry of Finance, the scientific research units of various ministry commissions under the State Council have been

testing the methods of "budgetary" contract and retention of savings in expenditures. Funds retained from increased income and savings are used to establish scientific research development funds and welfare and award funds. This has begun to change the past practice of simply relying on administrative methods to manage scientific research, and notable results have been achieved.

A number of problems are worth noting in the practice of the experimental centers where authority has been expanded.

#### 1. Relationship Between Scientific Research Units and the State

In using economic methods to manage scientific research, the income of the scientific research unit and the material benefits of its staff members and workers are linked, and this can easily lead to two erroneous tendencies. First, there is the tendency to concentrate the primary energy and interest on tasks which are directly linked to plant enterprises and produce greater income and to show no interest in tasks assigned from the top level, and these latter tasks are therefore not actively completed. Second, concern is directed to subjects of concrete production technology which can produce results within a short period of time and which provide immediate profits. No interest is shown for long-term, strategic, and basic research.

In this connection, we must first clearly understand that we are a socialist planned economy and our values must be constrained by the state plan. The scientific research tasks must be regulated primarily by the plan, and the completion of scientific research tasks under the plan must be guaranteed. If tasks under the plan are not properly completed, the higher controlling department may stop the unit involved from taking welfare and reward funds. Second, the higher controlling departments must improve their management of the scientific research plans, overcome bureaucracy, and make sure that the planned tasks are in line with practical conditions. If a directed task exceeds the capability of the scientific research unit or if it does not appear feasible as a result of evaluation, the research unit may request changes. Third, the use of the law of values should be united with the principles of material benefits, so that a relationship is created between projects under the plan and the material benefits of the research personnel. For instance, the trial use of contracting tasks may be considered, using the practices of rewards for completion and percentage retention of savings. Fourth, the use of the law of values must follow the requirements of the laws of science. Whether it is a project under the state plan or a project established by the academy (institute) itself, all projects should be coordinated and arranged as a whole, with consideration for both the long range and the immediate. Projects of long range, strategic, and basic natures should be planned appropriately. Adequate technical reserves should be guaranteed, and scientific and technical levels should be continuously improved.

## 2. Relationship Between Scientific Research Units and Related Enterprises and Sister Research Units

The practice of payment for technical services and transfer of results with compensation must first emphasize the principle of mutual benefit. The enterprise must receive greater actual benefit. Second, the operating style of the scientific research unit must be improved and both the quality of technical service and of research results should be raised, so that the research unit will have a greater attractive force. Third, the principle of "small profit and large sales" must be insisted upon. In the near term, compensation should be low and not high. The percentage division of profits should be small and not high. The type of "transaction with one beat of the gong" should definitely not be practised.

The transfer and application of results concern the vital interests of the research unit and its staff and workers. No one wants to have his own initial results and technical accomplishments taken away and completely altered. Thus, the phenomenon of mutual technical isolation is difficult to avoid, and this is harmful to technical exchange. Ideological education must be strengthened, and the bad habit of plagiarizing the results of others must be opposed and penalized. The communist spirit of helping others with joy and assisting others in adopting advanced technology must be publicized. After the signing of a technology transfer contract, the technology invention unit should introduce the new technology to the other contracting party without reservation, so that its application may be promoted as rapidly as possible and it will receive further improvement and development. Technology monopoly should not be permitted. Before the implementation of a patent system, there should also be a specific system and method to safeguard the rights and benefits of the inventor and the inventing unit. The honest working style of being practical and realistic should be promoted. Whenever a success is achieved where the views and reasons of others have been used in conducting the research, this must be clearly stated in the publication to show respect for the results of the labor of others. If technical accomplishments and preliminary results of others adopted during manufacturing research have led to success, definite material benefits should be provided voluntarily to the involved party. In order to speed up the development of technology, joint development and specialized cooperation should be promoted. All those with the same interest in a new technology should join together and cooperate on the basis of a division of labor. Higher level departments should encourage and organize this type of participation.

## 3. Proper Handling of Relationships Between Politics and Business, Between Strengthening Political Ideology Work and Adopting Economic Lever

Currently, there is an erroneous tendency to look upon large monetary reward as the only or most important way of motivating staff members and workers, or even to believe that this is ideology work. It is true that a suitable award system can motivate the staff members and workers. However, if carried to excess, the opposite may result. If we are lax regarding ideology and political work and only increase awards, not only may we not

motivate the staff members and workers but we will corrupt their thinking and encourage the growth of unhealthy trends and evil practices.

The ideological awakening of the scientific research army should be correctly evaluated. The income level of the large middle-aged scientific and technical personnel is low and they have a relatively difficult life. However, they are conscientious, they do not work for fame and benefit; their greatest desire is to fully demonstrate their intelligence and ability and make greater contributions to the four modernizations project of their fatherland. They are the backbone of the entire scientific and technical army. A small number of staff members and workers, especially a very small number of young staff members and workers, only "look at money" and one-sidedly pursue the capitalist way of life. This is a reflection of the corruption of our troops by the exploiting class. While adopting the economic lever, the party organizations of the scientific research units should strengthen party building; strengthen ideological and political work; promote the spirit of bitter struggle and doing scientific research with thrift and hard work; promote the spirit of giving oneself to intensive study, excellence beyond excellence, and scientific research with one heart; and lead the masses of staff members and workers to rouse their revolutionary spirit and, with one heart and one mind, to make greater contributions for the prosperity of the fatherland's scientific and technical work and the modernization of socialism.

(Edited by Song Hezhou [1345 3109 3166])

5974

CSO: 4013/19

## INDUSTRY

### BRIEFS

SHANDONG INDUSTRIAL DEVELOPMENT--Since the third plenary session Shandong Province's industry has got onto the track of sound and steady development. The industrial structure has become more rational, product mix has improved markedly and economic efficiency has noticeably increased. Light industrial output, which accounted for 45.3 percent of the province's total industrial output in 1978, increased to 56.5 percent in 1981. Heavy industry readjusted its product mix and orientation of service and its production began to pick up in the latter half of 1981. Total output of the machinery industry for the first 7 months of 1982 increased 21.2 percent over the corresponding 1981 figure. Total output of the chemical and petroleum industries increased 5.5 percent. The province's industrial output for the first 7 months of this year increased 7.76 percent over the corresponding 1981 figure. [SK140817 Jinan Shandong Provincial Service in Mandarin 2300 GMT 15 Aug 82]

GANSU LIGHT, TEXTILE INDUSTRIES--Since the third plenary session, Gansu Province has vigorously developed light and textile industries. Comparing 1981 with 1978, the total output value of light and textile industries increased 6.3 percent and profits, 19.8 percent. Light and textile industrial enterprises increased from 1,100 in 1978 to 1,248 in 1981. Through cooperation, this province now mass produces 200 new products. Many of these products meet domestic and world standards. [SK150448 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 14 Aug 82]

HEILONGJIANG TEXTILE INDUSTRY--Heilongjiang Province has vigorously developed its textile industry since the third plenary session. The total output value reached 1.47 billion yuan and tax and profits totalled 225 million yuan in 1981, each showing an increase of 100 percent over 1978. Over the past 3 years, the state and Heilongjiang Province have granted 210 million yuan in loans to expand the production capacity of textile plants. It is expected that by the end of 1982 the production capacity of hemp textile plants will increase from 14,800 to 21,000 spindles, that of wool textile plants from 14,400 to 20,000 spindles and that of chemical fiber plants from 7,000 tons to 27,000 tons, showing increases ranging from 40 to 200 percent over 1978. Two wool textile plants and three hemp textile plants are under construction. On completion in 1985, the production capacity of wool and hemp textile will increase 300 percent and chemical fiber textile 500 percent over 1978. [SK161156 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 15 Aug 82]



LIAONING STEEL PRODUCTION--Thanks to the effective role played by the party's economic policy, the Ahshan Iron and Steel Company, Liaoning Province, has greatly upgraded its economic returns. Over the past 3 years, the company has scored a 6.2 percent increase in profits each year and has increased 54 new steel products and 163 new varieties of products. Its 29 products have been appraised as fine quality by the national or provincial authorities. In 1981 the company turned out 2.5 million tons of steel products that are in short supply, which accounted for 60 percent of its annual steel output and a 650,000 ton increase over the 1978 figure. Its steel products directly supplied to agricultural and light industrial enterprises and to civilian markets reached 1.04 million tons in 1981, which accounted for 25 percent of its total sales. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 14 Aug 82]

JILIN INDUSTRY--Since the third plenary session, industry has steadily developed in Jilin Province. The proportion of light industry increased from 36 percent before readjustment to 42 percent. Heavy industry has reoriented to the service of agriculture and consumer goods, light and textile, electronic and construction industries. The total output value of heavy industry during the January-July period increased 6.9 percent and that of light and textile industries 7.9 percent over the corresponding 1981 period. During 1979-1981 this province had 15 industrial products named quality products at the national appraisal. On the basis of an average annual increase of 4.8 percent, the province's total industrial output value increased 7.4 percent and profits turned over to the state 22.6 percent over the same period in 1981. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 17 Aug 82]

LIAONING HEAVY INDUSTRY--Liaoning Province has achieved remarkable results in heavy industry after three years' readjustment. In 1981 the Anshan Steel and Iron Company supplied light industrial markets with 3 million tons of steel products, accounting for over 60 percent of its annual production. The chemical industry supplied 200 varieties of raw materials for the light textile industry, amounting to 40 percent of the total chemical industrial products. The 52 small nitrogenous fertilizer plants across the province registered losses of 19 million yuan in all. After readjustment, 40 of them continued operation and the losses dropped to 5.3 million yuan. [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 17 Aug 82]

LIAONING LIGHT INDUSTRY--Since the third plenary session of the party, light and textile industrial departments in Liaoning Province have actively implemented the readjustment policy and a good situation never seen before is emerging. In 1978, light industrial output value accounted for only 26.7 percent of the provincial total industrial output value; it rose to 37.6 percent in 1981 and enabled the province to rank fourth in the country in terms of light industrial output. In 1978-1981, our province's annual light industrial growth averaged 11.5 percent. Production of major consumer goods such as bicycles, wristwatches, sewing machines, beer and steel furniture more than doubled in the 3 years. Production of televisions and radios increased by 5.3 fold and 12 fold, respectively. [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 13 Aug 82]



HENAN INDUSTRIAL, COMMUNICATIONS ENTERPRISES--In 1980 and 1981, industrial and communications enterprises in Henan Province carried out 1,876 technical transformation projects. Total investments came to some 1.01 billion yuan. By the end of last year, the technical transformation projects, which accounted for 70.6 percent of total investments, had been completed. With the completion of technical transformation projects, industrial production has increased and light and textile industrial development has been speeded up. The value of the province's light and textile industrial output in 1979 accounted for 46.9 percent of the value of the province's total industrial output. The value of light and textile industrial output in 1981 was 54.9 percent of the value of the province's total industrial output. [HK181220 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 16 Aug 82]

CSO: 4006/617

## CONSTRUCTION

### BRIEFS

JILIN URBAN-AND-RURAL HOUSING CONSTRUCTION--Since the third plenary session of the 11th CPC Central Committee, Jilin Province has made great progress in urban and rural housing projects. Over the past 3 years, the province has completed urban housing building totaling 4.82 million square meters of floor space, which is equal to the total built acreage in the period from 1967 to 1978. About 500,000 people of over 81,600 urban households have moved into new homes. The real estate departments in urban areas have completed housing repairs totaling 5.3 million square meters, resulting in housing improvement of over 500,000 urban residents. Per capita housing acreage in urban areas increased from 3.02 square meters in 1978 to 3.62 square meters in 1981. Over the past 3 years, rural areas in the province have built new houses totaling 17 million square meters of floor space. At present, per peasant housing acreage is 9.2 square meters. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 14 Aug 82]

HUBEI CAPITAL CONSTRUCTION--Since the third plenary session of the 11th CPC Central Committee, the number of capital construction projects in Hubei Province has been gradually reduced year by year. The number of capital construction projects was reduced by 25.7 percent in 1980 and by 25.3 percent in 1981. The amount of investments was the smallest since 1977. Over the past 3 years or so, the amount of investments in light and textile industries has increased and the amount of investments in heavy industry has dropped. Although the amount of investments in heavy industry has dropped, the amount of investments in energy resources like electricity and petroleum, has greatly increased, guaranteeing that the needs of industrial production are satisfied. Over the past 3 years or so, the amount of investments in technical transformation has increased by 300 percent. Housing and building the network of commercial centers and welfare facilities for people has increased by 100 percent. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 14 Aug 82]

HEILONGJIANG HOUSING--Since the third plenary session, Heilongjiang Province has invested 1,827,920,000 yuan in housing construction, an increase of 705.13 million yuan over the liberation period. By the end of 1981, some 9,536,000 square meters of housing were completed. With the previously constructed 3.42 million square meters of housing for staff, the total residential housing now reaches 12,956,000 square meters. Some 260,000 staff households have moved into these new houses over the past 3 years. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 15 Aug 82]

HENAN ROAD CONSTRUCTION--The construction of roads in mountainous areas in Henan Province has developed quickly. At present, the whole province has 8,681 kilometers of roads in its mountainous areas. The length of these roads is 25 percent of the total length of roads in the whole province. Now, there are roads leading to all counties and communes in the mountainous areas throughout the province and there are bus services for 70 percent of the brigades. The communications and transport in the mountainous areas have undergone a very big change. [HK180921 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 17 Aug 82]

QIANGHAI LEAD-ZINC MINE--Some 2,000 workers of the Qinghai Provincial Construction and Development Co., undertaking the project of building a lead-zinc mine in Xitie Mountain, pledged to accelerate the construction and do quality work to greet the party's 12th congress. Located in the hinterland of the Qaidam Basin, the lead-zinc mine is one of the state's key construction projects. Construction on the project began this May. [SK252331 Xining Qianghai Provincial Service in Mandarin 1100 GMT 25 Aug 82]

LIAONING HOUSING CONSTRUCTION--Shenyang, 22 Aug (XINHUA)--More than 30,000 families have moved into new apartment buildings in Liaoning Province this year, bringing the number of urban families moving into new houses in this heavy industrial province in the past 3 years to 360,000, according to the provincial housing authority. Housing under construction in the province totalled 8.78 million square meters of floor space in the first 7 months of this year, of which 1.59 million square meters floor space of housing have been completed. The authority said the new buildings would provide more spacious rooms and better living facilities for each household. A total of 18.35 million square meters of floor space for housing, mostly 4-6-storied buildings, have been built since 1979 in towns and cities in the province. This is 60 percent more than the houses built during the 10-year period (1966-76) of the "cultural revolution" in the province. [OW251201 Beijing XINHUA in English 0728 GMT 22 Aug 82]

CSO: 4020/163

## DOMESTIC TRADE

### SMOOTH FLOW OF GOODS TO COUNTRYSIDE DISCUSSED

Beijing ZHONGGUO CAIMAO BAO in Chinese 22 Jun 82 p 1

[Editorial: "A Great Reform in Commodity Circulation System"]

[Text] The State Council's proclamation entitled, "Decision on Bridging the Commodity Circulation Channel Between Town and Country and Marketing Industrial Products to the Countryside," means a great reform in the commodity circulation system. Serious and thorough implementation of this decision will have great meaning in expanding industrial and agricultural products, developing the commercial economy, aiding the prosperity of urban and rural markets, strengthening the industrial-agricultural alliance and promoting the growth of an exceedingly favorable situation.

Ever since the Third Plenary Session of the party, agricultural production has been steadily increasing, supplying more and more agricultural by products to the nation; industrial development has been relatively rapid, too, registering a great increase in the volume and kinds of industrial products procured by commercial departments; in the wake of the growth of industrial and agricultural production, the market supply situation has also improved gradually. On the whole, the state of commercial affairs has been good indeed. However, in such an exceedingly favorable situation, commercial work is also facing new conditions and new problems. At present, one of the outstanding problems is that the industrial products supplied to villages do not meet the farmers' demand. In our country, where the rural population numbers 800 million people, the countryside represents the main body for the marketing of industrial and agricultural products. In recent years, based on the development of production, farmers' earnings have increased greatly and their requirements for capital goods and means of livelihood have broadened correspondingly. In many areas, however, although commercial wholesale units have large stocks of goods and farmers have money in their hands, still it is difficult to buy things. Because the farmers cannot buy the needed industrial products in good time, part of the money the government has earmarked to procure agricultural by products to be released in the villages cannot be duly recovered. Poor circulation has caused an accumulation of certain commodities, and yet it is mainly

on sales of commercial commodities that the acquisition of government taxes and revenues from profits depend. Consequently, active expansion of industrial products to the rural areas not only would fulfill the needs of the farmers' production and livelihood, but also would affect the equilibrium of the national budget. This is a major matter that has an important relation to the nation's commercial battlefront.

What are the main reasons industrial products cannot reach the villages? First, the town-country division of labor in the circulation system has caused a clogging of the channel; second, only a few routes are in existence to transport the goods to the countryside; and third, no priority has been given to the supply of commodities in the rural areas. In the light of the existing problems concerning the shortage of industrial goods in the countryside, the State Council in its decision has put forward views and demands for a concrete reform: under the uniform guidance of the local authorities and in accordance with the decision of the State Council, all commercial units and supply and marketing cooperatives must do a good job of reforming the circulation system for industrial products; they must seriously and thoroughly put into practice a new transportation system between town and country based on a commercial division of labor, under the full responsibility and control of the state-run wholesale companies; and they must carry out overall planning and make proper arrangements for town and country markets. Such a reform would be conducive to breaking down regional blockades, avoiding the division of city and countryside markets, and improving the organization of commodity circulation on the principle of economic reasonableness.

In the process of reforming the industrial commodity circulation system, we must open up new ways for the goods to reach the villages, sum up new experiences and adjust ourselves to new conditions. At present in some places, the jointly operated stores of state-owned commercial companies and specialized retail sales departments of basic-level supply and marketing cooperatives serve very well as a new route for opening up commodity circulation channels between town and country to enliven the village market and also as a major means to activate wholesale business and adapt to the various economic needs of rural commerce. These jointly operated stores can fully put into play the superior position of state-owned wholesale companies in the realms of capital, commodity sources and business administration, as well as the existing equipment and personnel of the basic-level supply and marketing cooperatives.

From the administrative viewpoint, they can solve the problem of capital shortage in the cooperatives and also release large amounts of commodities suitable to village needs, thereby expanding sales in the countryside. As to profit distribution among the jointly operated stores, we must pay attention to bring into play the initiative which is advantageous to the cooperatives, so they can augment their revenue through these jointly operated stores. Both state-run

commercial companies and basic-level supply and marketing cooperatives must engage in purchasing and marketing activities, improve their business administration and enhance their economic efficiency. State-run commercial companies must properly manage the organizations which have already been extended down to the countryside, and continue to set up more such organizations in other places according to need and proper conditions. This is another way to improve the circulation channel between town and country, which must be continuously perfected through the summing up of experiences.

In the basic-level supply and marketing cooperatives, one of the major forces to activate a rural market and facilitate rural life, which has been useful for years, is production teams and brigades, with more than 500,000 supply and marketing agency points. However, with the emergence of various forms of production responsibility systems in the rural areas, new changes have taken place in many regions, at the same time, the developing collective and individual businesses all enjoy wholesale prices when buying commodities, while purchasing and marketing agents merely get a fixed commission fee, thereby forming a new contradiction. Based on this new situation, a commission agent may, with the approval of the commune and production brigade, request that his agency be changed into a self-operated store on contract to the production team, and thus buy goods at wholesale prices directly from jointly run wholesale stores and the nearby wholesale department of a state-operated company, in order to encourage his initiative in extensively marketing industrial products. Self-operated stores must pay taxes in accordance with regulations and implement the price policy of the government. Commercial units must strengthen their control over self-operated stores in the rural areas and formulate the list of commodities for business, or else the latter would only deal in goods that yield big profits.

Regarding the distribution of industrial products in urban and rural areas, we must continue to thoroughly execute the principle of "two priorities": 1) if both town and country need a certain industrial commodity, priority must be given to supply the countryside and 2) if both town and country need a certain nonstaple food, priority must be given to supply the urban areas. In the case of some important planned commodities which have a close relationship with the people's livelihood, sales and marketing of them in urban and rural areas must follow policy regulations. Planned commodities meant to be allocated to the villages must not be detained again and again, but really handed to the farmers. We must continue to bring the role of basic-level supply and marketing cooperatives into full play. State-run companies must firmly establish an attitude of serving these cooperatives, treating them as their own retail sales network, supporting their business, guiding their development, and rely on them to do a good job in supplying the capital goods and daily necessities in the rural areas. At the same time, we must bring into play the role of all kinds of collective and individual businesses and other business channels, helping them carry out their business activities within the framework of government regulations.

State-operated commercial wholesale companies and basic-level supply and marketing cooperatives should make great efforts to expand, go to market and activate sales so that more industrial products can be seen by the farmers. All retail stores, basic-level cooperatives and approved collective and individual businesses that wish to buy the commodities procured by state-operated wholesale companies should be given priority to do so. Commodities that are neglected, unwanted or seldom purchased by basic-level cooperatives may be marketed directly to the villages by organizing mobile sales teams; this is in addition to wholesale companies taking proper measures by way of encouraging basic-level cooperatives to deal in these commodities. However, wholesale companies must not go to the countryside to retail goods in great demand, the distribution of which must be implemented according to plan. Those sales people who go to the villages to sell commodities should be given an appropriate living allowance.

Reforming the commodity circulation system and actively marketing industrial products to the countryside constitute a major task of commercial units in urban and rural areas at present. The broad masses of commercial workers must promptly take action and plunge into this work under the uniform guidance of the local government. We believe that if we abide by the spirit of the State Council's decision and begin our work on all sides firmly and conscientiously, we are sure to be able to open up a new situation for industrial commodities to reach the countryside and to make the village market more prosperous than ever.

9300

CSO: 4006/516



## DOMESTIC TRADE

### BRIEFS

LIAONING TRADE FAIRS--The number of urban and rural trade fairs throughout Liaoning Province has reached 1,156 over the past 3 years. In 1981 the province scored a volume of trade fair business worth over 850 million yuan, a 350 percent increase over the 1978 figure, which accounted for 6.5 percent of the retail sales of social commodities. The development of urban and rural trade fairs has also encouraged the people to engage in sideline production. As of now, there are over 350,000 households across the province which have signed a contract of domestic sideline production. Per household extra income from domestic sideline products in 1981 ranged from 20 yuan to over 100 yuan. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 14 Aug 82]

JILIN TRADE FAIRS--Since the third plenary session of the 11th CPC Central Committee, Jilin Province has enjoyed a brisk business in urban and rural trade fairs. The province has scored a 38.2 percent increase in the business volume of urban and rural trade fairs since the beginning of 1982 over the figure of the corresponding 1981 period. The volume is equal to 5.2 percent of retail sales of social commodities. Since 1979, the province has scored over a 20 percent increase in trade fair business volume each year. Since the third plenary session, the number of urban and rural trade fairs in the province has reached 612, a 100 percent increase over the 1978 figure. [SK170942 Changchun Jilin Provincial Service in Mandarin 1100 GMT 16 Aug 82]

CSO: 4006/612

## LABOR AND WAGES

### YUNNAN UNEMPLOYMENT SITUATION

Kunming YUNNAN RIBAO in Chinese 16 Apr 82 p 1

[Article: "Four Hundred and Twenty Thousand Unemployed Persons in Yunnan Have Been Placed Over the Past Three Years; Population Being Supported in Cities and Towns Has Decreased and Living Conditions Have Improved"]

[Text] From 1979 to the end of 1981, more than 420,000 unemployed persons in Yunnan have been placed. Employment in cities and towns has increased from 64 percent in 1978 to 68.7 percent at present. As the number of employed persons has increased, the population being supported in the cities and towns of Yunnan (including this writer) has decreased from 2.2 persons in 1978 to 1.95 persons in 1981.

In various areas of Yunnan, there has been a conscientious implementation of the policy of "the labor sectors introducing employment, the people voluntarily organizing to obtain employment, and individuals seeking work under overall national planning and guidance." Collective enterprises were set up on a large scale and there has been a suitable expansion of the individual economy with the result that most of the unemployed persons have been placed. With the expansion of production and the increase in employment, the economic income of the people of the cities and towns increased. The collective enterprise managed by the Kunming Bus Station of the Provincial Communications Department has in two years placed 267 unemployed men and women. This has resulted in an average annual increase in income per person of 53 yuan for the 4,800 workers of the station. In 1978 there were more than 10,000 residents in Chengguanzhen in Zhenxiang County in the Zhaotong Prefecture. One-fourth of these persons was unemployed and there were 4,231 persons having very great difficulty with their livelihood. Over the past three years, close to 20 new collective enterprises have been started and more than 1,600 persons have been placed. This has brought about a great improvement in the living conditions of this segment of citizens.

10019

CSO: 4006/472

## LABOR AND WAGES

### LIVING STANDARD IN FUJIAN'S RURAL AREAS IMPROVING

Fuzhou FUJIAN RIBAO in Chinese 9 Jun 82 p 1

[Text] The Provincial Bureau of Statistics recently summed up its research and analysis concerning people's standard of living based on the fixed regular income and expenses of 420 representative farming households. Its study showed that since the Third Plenary Session of the CCP Central Committee, the net income of farmers in our province has gone up steadily and the number of affluent households has increased every year. Furthermore, after utilizing their earnings to improve their standard of living by fulfilling essential needs and enjoying cultural amenities, their savings have piled up every year. In brief, farmers' lives are getting better and better.

Judging by the figures, the net income of farmers has steadily increased by a large margin since the Third Plenary Session of the party. In 1981, the annual net income of a farmer exceeded 231 yuan. In 3 years' time, each farmer had increased his earnings by more than 94 yuan, or an average of more than 31 yuan per year, representing a progressive increase of 18 percent. While farmers' earnings rose continuously, the number of affluent households has also been increasing. Among the 420 households, there were 86 whose members each had an annual net income of more than 300 yuan, representing 20.48 percent of the total households; and there were 370 households whose members each had an annual net income of more than 150 yuan, or 88.09 percent of the total. Compared with 1980, this meant an increase of 219 percent and 62.28 percent, respectively. On the other hand, the households whose members each earned an annual net income of less than 150 yuan dropped by 73.96 percent, while the number of households whose members each earned an annual net income of less than 100 yuan dropped from 41 to 1.

It is obvious that based on their increased income, the cost of living of farmers has increased. In 1981, each farmer spent 16.60 yuan per month for his consumption needs on the average, an increase of 5.91 yuan from the 1978 figure, or 55.29 percent. The farmers are gradually eating better food, wearing better clothes, living in better houses and using better goods. In 1981, each person spent an average of 10.29 yuan for food per month, an increase of

43.72 percent compared with 1978. The quality of staple food has greatly improved. Consumption of subsidiary foodstuff has increased by 96.09 percent. Compared with 13.97 percent increase in staple food, this meant a more rapid increase, by 82.12 percent. For clothing, each person spent an average of 19.98 yuan per year, an increase of 6.06 yuan compared with 1978. The quality of clothing has improved. The use of synthetic fibers, combed cotton, woolen cloth, silk, worsted goods and flannels have increased, while that of rough materials dropped. As to appliances, each person spent an average of 18.71 yuan per year, an increase of 9.33 yuan compared with 1978. For instance, there are 28.57 sewing machines in every 100 households, an increase of 1.3 times from 1978. There are 30 radio receivers in every 100 households, an increase of 2.23 times. For housing, each person spent 14.42 yuan per year, an increase of 9.07 yuan from 1978. At present, the area of living quarters of each farmer exceeds an urban worker's space of 5.89 square meters by 86.25 percent. In cultural matters, each person spends 5.73 yuan per year, an increase of 2.34 yuan from 1978. The standard of living of farmers is improving continuously, so joyful changes are taking place in consumption structure. The statistics show that the proportion for housing and appliances has risen, that for clothing has remained constant, while that for food has dropped, an indication that after getting good food and warm clothing, the farmers are concentrating their attention on living in better housing and purchasing high-quality products.

With their earnings greatly increased and their standard of living raised, many farmers can afford to save money. At the end of 1981, each farmer managed to have cash in hand of 22.69 yuan on the average, an increase of 7.27 yuan compared with the 1980 figure. Among the 420 households, each household on the average bought fixed assets valued at 38.35 yuan per year. The financial condition of the farmers is getting better and better. The gap between the earnings of farmers and urban workers is being narrowed. In 1981, the average monthly income of a farmer reached 19.3 yuan, which narrowed the gap between the livelihood of a farmer and an urban worker by 15 percent.

9300

CSO: 4006/516

## LABOR AND WAGES

### BRIEFS

HEILONGJIANG WORKERS' PAY RAISE--Since the third plenary session of the 11th CPC Central Committee, staff and workers throughout Heilongjiang Province have had large wage increases. According to statistics compiled by the department concerned, in 1981 the province scored a 36.3 percent increase in funds used for salaries of staff and workers over the 1978 figure and a 10.9 percent increase each year in the 1978-1981 period. Per capita cash income amassed from salaries reached 831 yuan, a 20.6 percent increase over the 1978 figure. By accounting for inflation the province scored a 7 percent increase in annual per capita wages over the 1978 figure and scored a 2.3 percent increase each year over the past 3 years. [SK220442 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 21 Aug 82]

LIAONING PLACES UNEMPLOYED--During the 3 years from 1978 to 1981, Liaoning Province provided employment for 2.28 million persons, roughly one-tenth of the total jobs created across the country during that period. Of those employed in that period 1.95 million, or 85.3 percent, were educated youths who had been rusticated and urban people awaiting work. [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 13 Aug 82]

JILIN PER CAPITA INCOME--Policies adopted since the party's third plenary session have greatly mobilized the masses and cadres in Lishu County, Jilin Province, and the county has enjoyed successive good harvests in the past few years. The country's 1981 per capita income was 220 yuan, leading the province. Grain sold to the state was 1,436 jin per capita, leading the country. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 17 Aug 82]

JILIN URBAN JOB ARRANGEMENTS--Since the third plenary session of the 11th CPC Central Committee, Jilin Province has scored remarkable achievements in arranging jobs for urban people awaiting work. According to statistics, the province has placed jobs for 1,044,700 urban people, 91.4 percent of the total number of jobless people. There are 28 municipalities and counties in the province which have completed job arrangements for middle school graduates who left school before 1980. [SK210555 Changchun Jilin Provincial Service in Mandarin 1100 GMT 20 Aug 82]

HEILONGJIANG JOB PLACEMENT--Since the third plenary session Heilongjiang Province has made a breakthrough in placing the jobless. As of the end of June, the province had provided jobs for 1.73 million urban people awaiting work in 3 and 1/2 a years. [SK151020 Changchun Jilin Provincial Service in Mandarin 2200 GMT 14 Aug 82]

CSO: 4006/617

## TRANSPORTATION

### HUMAN ERROR LEAVES THREE DEAD, 158 INJURED IN DERAILMENT OF PASSENGER TRAIN

Shenyang LIAONING RIBAO in Chinese 5 Jun 82 p 1

[Article by Yang Jizhu [2799 4949 2691] and Jiao Li [3542 0448]: "The Lesson of the Overturning of Train No 193"]

[Text] On 28 May, just as the Safety Month was about to end, a serious accident of the overturning of a passenger train occurred on the Shenshan line.

At 4:05 in the afternoon, the nonstop, high-speed passenger train carrying over 700 passengers from Jinan to Jiamusi and traveling at a speed of 90 kilometers per hour passed the Xinglongdian Station administered by the Jinzhou Railway Bureau in Xinmin County, Shenyang Municipality. About 500 meters from the station the engine derailed and No 1 to 8 carriages overturned one after another. Among the passengers, 3 died on the scene and 158 suffered serious and minor injuries. Due to the attention and care given by the leadership in concern as well as the cooperation between the army and people, the rescue was prompt, the injured personnel was brought to safety, the railroad was speedily repaired, the entire line was quickly reopened to traffic, and losses were minimized.

What caused this major accident? On careful examination, it was neither a problem of engine equipment and railway tracks nor a malfunction of station facilities, automatic junction switch and other control systems. It was purely a man-made accident, one created by the maintenance workers of the Dahushan labor section under the Jinzhou Railway Bureau who violated labor discipline and broke the rules of operation.

In the afternoon of the 28th, 6 maintenance workers of the Dahushan labor section led by team leader Sun Youyi [1327 0645 5030] were working on the tracks about 500 meters from Xinglongdian Station. At almost 4:00, Sun took out one yuan so that Jing Guen [2529 6311 1869], the maintenance worker operating the track jack, could leave the tracks to buy popsicles. Jing left the tracks to buy popsicles without removing the hand-operated track jack which was fixed to

the tracks. When the popsicles were brought back the other five people went up in a rush and entered the switch room at the junction eating their popsicles. It was only after No 193 train came and struck the track jack that they came to their senses and each was stunned. The main troublemakers, Sun Youyi and Jing Guen, are being detained pending court hearing. The other 4 young workers have been suspended from duties to undergo investigation.

The overturning of an entire passenger train on the Shenshan line was the first since the founding of the state. The losses were serious and the lesson is profound. This accident should not have happened at all. The team leader Sun Youyi, one of the main troublemakers, is a veteran staff worker with over 20 years of experience who has frequently worked in the area around Xinglongdian Station. Once every 24 hours passenger and freight trains pass through this station 156 times, an average of one train every 10 minutes. This was clear to him and he understood the rules and regulations concerning work safety. But his mind was off guard and he became careless, so that a small and insignificant thing created an irreversible major disaster. This lesson is too profound; it elucidates the problem of safety. One must not lax for a moment and cannot be careless in any way but must adhere to rules and discipline to ensure production safety.

In the circular on the launching of the activities of the "safety month" in May, concerned departments of the State Council emphasized that leadership at all levels must use various forms to educate staff workers on the safety in adhering to rules and discipline, oppose violation of the rules of operation, firmly establish the mentality of "safety first," and have every rule assured and every matter accounted for. The problem of this accident arose from the failure to implement the mentality of "safety first" and safety measures. Even though concerned departments of the Jinzhou Railway Bureau gave wide publicity to the slogans of the activities of the "safety month," they did not bring safety measures to the real actions of staff workers and the masses. Some staff workers say: the higher authorities can shout whatever they wish while the subordinates do what they want to do. Prior to this accident of the overturned train, a major accident had occurred on the Jinzhou Railway, but concerned personnel still had not learned the lesson. This clearly shows that on the question of safety, a general call does not work and we must stress implementation. We must implement our mentality so that every staff worker will truly pay attention to the problem of safety and can self-consciously do one's work in accordance to rules and regulations. We must stress the implementation of measures, give consideration to every aspect and strive for perfect safety.

Although the accident of the overturning of the passenger train occurred on the Jinzhou Railway, all levels of leading organs and units of enterprises and



professions should learn a lesson. In the recent period, major accidents frequently occurred in many places and safety work has numerous loopholes. We must treat the incident of the Jinzhou Railway as a lesson, strive to remove hidden danger, and exert our effort to realize safe production and civilized production.

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CSO: 4006/519

## TRANSPORTATION

### WORK ON NATION'S LONGEST BRIDGE ENTERS FINAL STAGES

Beijing GONGREN RIBAO in Chinese 2 Jun 82 p 1

[Report by Tang Daiqing [0781 0108 3237] and Fan Yuzhang: 5400 3768 4545 :  
"China's Longest Chang Jiang Highway Bridge Connected"]

[Text] The longest highway bridge in our country--the Chang Jiang Bridge in Luzhou, Sichuan--was victoriously connected yesterday, 1 month ahead of schedule. The bridge project has now entirely entered the final work phase on the bridge surface and is slated to be completed and open to traffic by "October 1" this year.

The main bridge of the Chang Jiang Bridge in Luzhou is 1255.6 meters in length. It has 12 piers and 2 abutments and has a prestressed reinforced "T" shape structure. Each of the 3 main bridge sections has a span of 170 meters. The approach on the north and south banks is almost 7 kilometers long. This bridge is designed to withstand the once-a-century catastrophic flood. The main bridge is 45 meters above the lowest water level and in the highest flood period 7,000-ton ships can pass under. Specialists in concern have recently tested and verified that the engineering quality of the bridge is excellent and is entirely in accord with the design requirements.

The funds for the bridge are raised, the design is made and the construction is carried out solely by the concerned departments of Sichuan Province. Construction began in October 1976. When completed, the bridge will provide great convenience for the broad masses and the large numbers of motor vehicles that travel north and south of the major industrial town of Luzhou in southern Sichuan. It will vigorously promote the flourishing growth of industrial and agricultural production of the area.

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CSO: 4006/519

## TRANSPORTATION

### BRIEFS

NEW CAAC FLIGHTS--From 5 August the Shanghai Administrative Bureau of the CAAC will operate the following newly scheduled flights: Shanghai-Qingdao-Beijing on every Thursday and Sunday and Shanghai-Qingdao-Dalian on every Monday. Beginning the same day the CAAC's Shenyang Administrative Bureau will add two more flights to its schedule: The Shenyang-Dalian-Qingdao-Shanghai flight on every Saturday, and the Shenyang-Dalian-Qingdao-Beijing flight on every Wednesday. [Shanghai WEN HUI BAO in Chinese 3 Aug 82 p 1]

LITANG-ZHANJIANG RAILROAD IMPROVED--Except for some sections that are being rebuilt, all the track on 286 kilometers of the 371-kilometer Litang-Zhanjiang railroad has been reinstalled. The original track was formed by track segments of the length of only 25 meters. But these track segments have now been replaced by segments one kilometer long. This project has been funded by the state to promote tourism. [Nanning Gunagxi Regional Service in Mandarin 1130 GMT 9 Aug 82]

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GENERAL

BRIEFS

HEILONGJIANG PEOPLE'S PURCHASING POWER--As of the end of June, Heilongjiang Province had marketed 800,000 television sets, some 20 times that of 1979. At present, every 10 households has a television set. About 45 percent of the residents in Harbin have televisions and most families in Daqing Municipality have bought color televisions. Heilongjiang provincial commercial departments estimate that the sales of televisions will be increasing. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 17 Aug 82]

GUANGDONG ADVANCED ENTERPRISES MEETING--The first provincial meeting of advanced construction units and collectives was held in Guangzhou on the afternoon of 9 August. Attending the meeting were 180 representatives of advanced enterprises and collectives and advanced individuals from the more than 250,000 staff and workers of the more than 350 construction enterprises in the province. Vice Governor Liu Junjie attended the meeting and gave a speech. He said that since the third plenary session of the 11th CPC Central Committee, Guangdong Province has reorganized its construction enterprises and has thus vitalized them. As a result, their profits have nearly doubled, their equipment is mainly of first-class quality and their labor productivity has set a new record, rising from ranking 22d to ranking 6th in the country. The meeting will select six representatives to attend the national meeting of advanced construction units and collectives. [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 9 Aug 82]

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END